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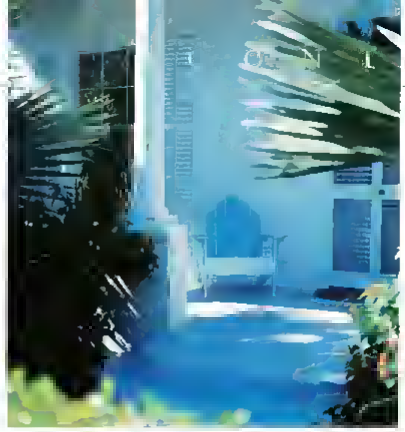

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cover A front porch beckons at *This Old House*'s project in Key West, Florida. Photograph by Pascal Blanchon. See story, p. 73.

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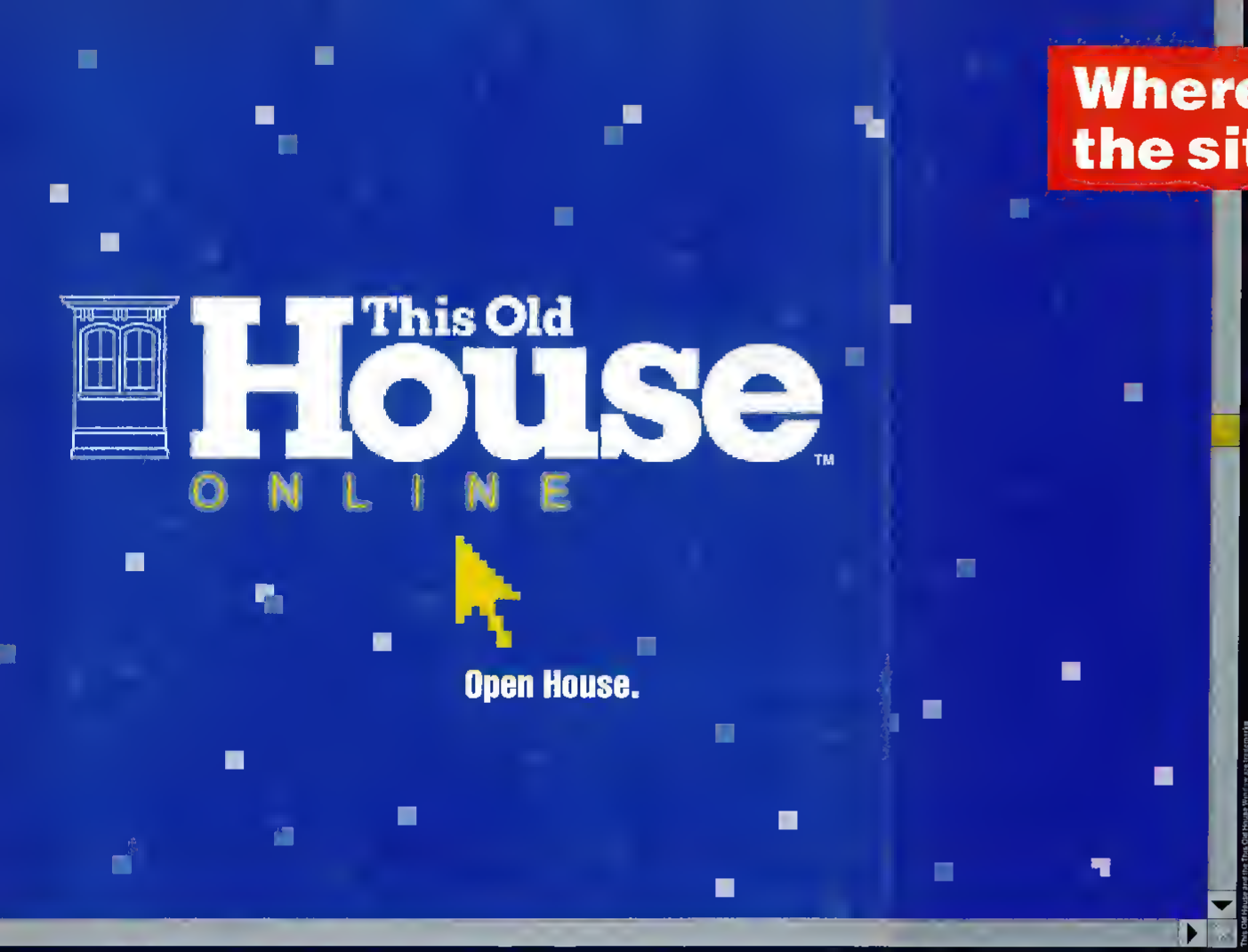
ILLUSTRATIONS: BRUCE WOLLER, PHOTOS: (CLOCKWISE FROM TOP) PASCAL BLANCHON, NOAH GREENBERG, NOELLE HOEPPE, ANDREW KAUFMAN



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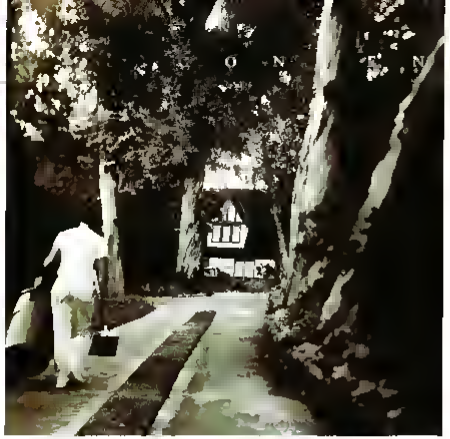

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"Remember, it's a driveway, not an airport runway."
—Robert A.M. Stern

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PHOTOS, CLOCKWISE FROM TOP: DAVID ALBANESE; KELLER & KELLER; ANDREW GALLIMAN; DAVID PRINCE

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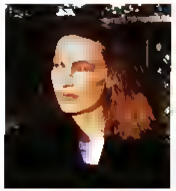

"At first it looked like a damp, dark mine," says **TALA SKARI**, who wrote "French Farmhouse" (page 96), about a farmhouse undergoing extensive renovations near Morannes, France. "The whole thing won't be finished for the next couple of decades, so we chose to follow just one room, the kitchen." A *Life* magazine correspondent stationed in Paris, Skari enjoyed escaping the big city by visiting rustic Morannes. Her next major project, however, will take her into a region as turbulent as the country environment is peaceful. Skari will be reporting on relief efforts in Kosovo, a war-torn province of Yugoslavia.

After two decades as a New York City real-estate attorney, **MICHAEL SHAPIRO**—the writer of "The Deed Is Done (Or Is It?)" (page 59)—has collected plenty of experience with title insurance, which would be home owners purchase to ensure that their house really belongs to the seller—rather than, for example, to the seller's ex-wife. "Most of the time, title companies do a good job of finding all the records pertaining to the property," says Shapiro. "But every so often, I dig something up they didn't know about." Shapiro, who has also composed operas and written *The Jewish 100* (1996, Citadel Press), lives in Chappaqua, New York.

"In the photography industry, there's nothing but pretense," **KOLIN SMITH** says of his chosen field. "That's why I like the *This Old House* crew. They're real people." A frequent contributor to the magazine, Smith shot pictures for "Houses in the Key of Life" (page 73), "Top Job" (page 80) and "A Fresh Face for Old Wood" (page 47). While photographing the last story, Smith was surprised to see that painter John Dee "could tell tonal ranges even I couldn't distinguish." As for the tedious task of applying clear finishes—which Dee performs so well—"I don't have the patience." Smith prefers the relatively speedy gratification derived from sculpting pumice stone. "It's soft and easy to carve," he says. "I can finish a figure in four hours." Smith lives in New York City.

~Rebecca Reisner

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PHOTOS: TOM, STEPHANIE, TUNDY, MERTLE AND BOTTOM, DIANA HAAS

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PHOTO: KELLER & KELLER

Flight Plight?

The TV episodes on the Watertown project house show that the number of stairways was decreased from three to one. Moving the best stairway to the most prominent position certainly created more usable floor space. I was concerned, however, that now there is only one route of egress from the second and third levels of the house in case of fire. What if the one and only stairway is involved in a fire?

JIM GALL, *via E-mail*

This Old House *contractor Tom Silva replies: There are three roofs that can be accessed easily in case of a fire. As for the third floor, for now it will be used for attic storage, not sleeping. Remember, there are two people living in that big house, with three or four extra bedrooms on the second floor. And the house is also equipped with a state-of-the-art smoke and fire alarm system.*

Live Wire

The photo labeled "net gain" in "The End Is in Sight" (Extras, December 1998) shows a cord whose insulation is pulled back from the plug, with exposed conductors beneath. This is a safety concern. The cord is less likely to resist rough handling—when someone disconnects it from an outlet by pulling the cord instead of the plug. Without the sheath in place, the wires can pull from the electrical connection, creating a short circuit or shock hazard and possibly damage to insulated conductors.

JOSEPH PETRARCA, *Burlington, Vt.*

Cautionary Tales

"Renew Your Wedge's Edges" (Update, December 1998) hit close to home, as I have been carrying a piece of wedge shrapnel in my right index finger for 30 years. Until I read the piece, I was blind to the mechanism of shrapnel formation, so thank you. The next piece in that same issue, "Making It up as You Go Along," however, made me cringe. Although it was a humorous essay, the tone leads one to believe that making do with the wrong tool is acceptable. I work in a manufacturing facility where the great majority of injuries are ergonomic or arise from the use of the wrong tools. A thousand trips up and down the ladder to retrieve the right tool are better than one trip to the emergency room.

JOHN LANDI, *Winchendon, Mass.*

Laboring in the Cold

I was enchanted by the restraint and pristine appearance of the Cape Cod house built in 1789 in Killingworth, Connecticut ["The Great Cape," January/February 1999]. The statement on page 84 concerning the house's borning room, "where babies were delivered and nurtured near the warm hearth," puzzled me. That tiny corner room behind the first-floor bedroom, cut off from the central chimney stack with its fireplaces on three sides (one in the back kitchen, one in the parents' bedroom and one in the parlor) must have been bitterly cold in winter. Having endured four days of near freezing inside temperatures arising from power outages from a Christmas-eve ice storm, I would guess that the borning room offered the mother some privacy during labor but hardly fireplace warmth; babies slept near the parents' bed and the warmth of its fireplace during winter nights. Perhaps during the warmer months, the tiny borning room seen in some early houses could have served as a nursery until the little ones could safely climb to the sleeping loft above. This tiny cold room could also have functioned as a larder.

MILDRED LANGE RANZINI, *Williamsburg, Va.*

PHOTO: ANDREW KAUFMAN

Mystery Book

We watch the show religiously to get tips and help with our projects. One Watertown project episode shows the backyard beautification, which included a new fence. Steve Thomas displayed a book about fences, but we didn't get the title or author. Can you help?

LINDA AND MARK THOMSON, *Juneau, Alaska*

The book you saw was actually a catalog from the fence maker, Walpole Woodworkers. Call 800-343-6948 for a copy.

Concrete Information

T.O.H. has confused cement with concrete ["Life After Drywall," Extras, November 1998]. Cement is a gray powder mixed with aggregate and water to form concrete. As a civil engineer, I could not let this confusion continue. (It is a small matter, but engineers are like that.) By the way, concrete can be screeded, floated, finished and even pumped. But since concrete is a mixture and not a liquid, it is *placed* rather than *poured*.

JOHN HOCK, *St. Louis*

kudos

I recently purchased the A20-F height gauge from Angle Wright Tool Co. I failed to realize how utterly simple it is to recalibrate the tool to zero and wrote to the manufacturer for help. I was pleasantly surprised to receive a telephone call from the owner of the company to let me know how to perform the task. He left detailed instructions on my answering machine. Then, much to my delight, he telephoned and left several more messages, each time expressing heartfelt concern for my happiness with his product. Needless to say, I strongly recommend Angle Wright Tool Co. to my friends, my associates and your readers.

PAUL DERSHEM, *West Van Nuys, Calif.*

punch list

***definition:* a list of items incorrectly done or remaining to be finished on a construction job**

January/February 1999

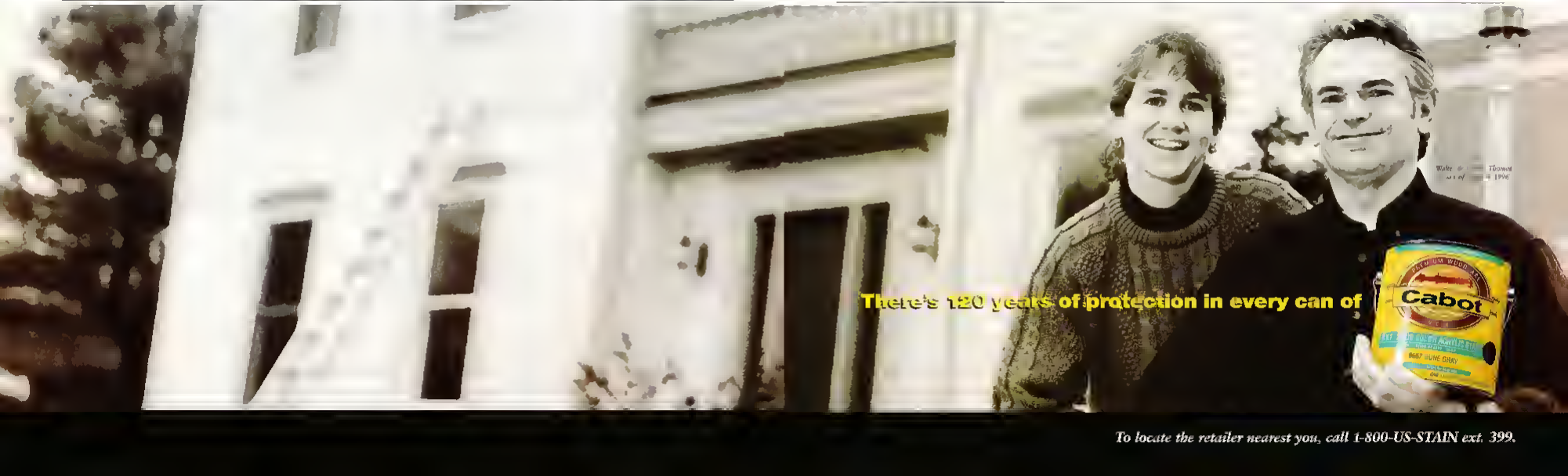
- The table of contents should have attributed "Three Cheers for Cherry" to writer Brad Lemley.

March 1999

- The kitchen cabinets featured on page 79 of "Watertown Finale" are made of quartersawn white oak.

Address mail to Letters, *This Old House* magazine, 1185 Avenue of the Americas, New York, NY 10036. Please include your full name, address and daytime phone number. Published letters will be edited for clarity and length and may be used in other media.

FOR SOURCES, SEE DIRECTORY, PAGE 107



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OUTTAKES

BEHIND THE SCENES AT THIS OLD HOUSE

Will teamwork get sailors Tom, Norm, Steve and Rich to America's Cup 2000?

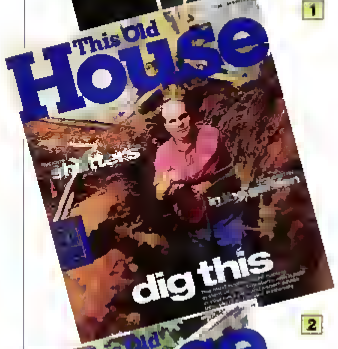
ILLUSTRATION BY JOE DANIELLO

TEAM T.O.H.

FUNNY HOW RICHARD TRETHEWEY'S RECENT VISIT TO KEY WEST, FLORIDA, WHERE HE LENT HIS HEATING AND PLUMBING EXPERTISE TO THE FLEMING STREET PROJECT, HAPPENED TO COINCIDE WITH THE FIERCELY COMPETITIVE 274-SAILBOAT REGATTA KNOWN AS KEY WEST RACE WEEK. TURNS OUT THAT RICHARD, A LIFELONG SAILOR, WAS INVITED BY HIS BOYHOOD CHUM PETER CRAIG TO OBSERVE THE FIVE-DAY REGATTA FROM THE COMMITTEE BOAT—A COVETED VIEWING SPOT RIGHT ON THE STARTING LINE. (CRAIG'S COMPANY, PREMIER RACING, ORGANIZED THE EVENT.) BECAUSE OF *THIS OLD HOUSE*'S PACKED SHOOTING SCHEDULE, HOWEVER, RICH HAD TO FORGO THAT RIDE AND WAS REASSIGNED, ALONG WITH FELLOW SAILING BUFFS NORM ABRAM, STEVE THOMAS AND TOM SILVA, TO A V.I.P. WATER LAUNCH THAT CIRCLES JUST OUTSIDE THE RACE COURSE. "HEY, IT STILL BEAT CRUISING AROUND IN MY BABA 35," RICH SAYS, REFERRING TO HIS OWN SAILBOAT OFF CAPE COD.

COVER UPS

1



2

3

EVERY ONCE IN A WHILE THE GUYS ON THE SHOW CALL STEVE THOMAS "STEVE." THE REST OF THE TIME HE ANSWERS TO "LAWNBOY." STEVE, AS REGULAR READERS WILL RECALL, APPEARED ON *THIS OLD HOUSE* MAGAZINE'S MAY '98 COVER 1 LOOKING AT HOME WITH A SHOVEL AND A WHEELBARROW FULL OF MULCH. NOW EVERY TIME ONE OF THEM WANTS HIS GRASS MOWED, HE CALLS STEVE. "YOU'VE GOT TO BE ABLE TO TAKE A JOKE TO HANG AROUND WITH US," SAYS RICHARD TRETHEWEY. RICH CAN DISH IT OUT, BUT CAN HE TAKE IT? "YEAH, THEY CALL ME 'RICH IN THE DITCH' BECAUSE THE JULY/AUGUST '96 COVER 2 SHOWED ME STANDING IN A DITCH," HE SAYS. "BUT THAT WAS JUST STEVE'S WEAK ATTEMPT TO GET ME BACK." ATTEMPTS TO NICKNAME TOM "MAINTENANCE MAN" AFTER THE SEPTEMBER/OCTOBER '97 COVER 3 FIZZLED, BUT RICH IS ON THE CASE. "WE COULD SHOW HIM BAKING. HMMM. . . 'MUFFIN MAN.' THAT WORKS."

THIS ONE'S ON THE HOUSE

Around this time of year, between the winter and fall projects, everyone at This Old House *is ready for an extended coffee break. But this year we have one more project to tackle on a very special house. On May 1, about 75 people from the television show and the magazine—including Steve Thomas, Tom Silva and Richard Trethewey—will join an army of 9,000 volunteers as part of the AmeriCares Home Front Program. Last year, Steve participated in a couple of projects with AmeriCares, a nonprofit humanitarian aid organization that repairs up to 200 houses in Connecticut and New York, and liked it so much he promised to recruit more of the* TOH *gang for this year's fix up day. "The satisfaction for me and for the volunteers is tremendous," Steve says. "But the immediate benefit to the home owners and the seeds that are planted for neighbors to make repairs is the truly amazing affect of AmeriCares." Watch for a report on the big day in the September issue of* This Old House *magazine.*

COVER PHOTOS: 1. CHRISTIANA CIPPAS 2. BARRY WEBB, S. MILLER & KILLYK, AMERICARES PHOTOS COURTESY JERRY BIANCHI.

LIFE IS BEAUTIFUL

WHAT IS IT ABOUT FLORIDA THAT INSPIRES ARCHITECTS TO DESIGN NOT JUST HOUSES BUT ENTIRE TOWNS? WE'RE NOT JUST TALKING RETIREMENT COMMUNITIES, OF WHICH THERE ARE MANY, BUT MORE AMBITIOUS TOWNS LIKE SEASIDE, AND NOW, COURTESY OF DISNEY, CELEBRATION, A COMPLETELY NEW OLD-FASHIONED TOWN OR, AS DISNEY CALLS IT, A "PEDESTRIAN-FRIENDLY PLACE TO LIVE, WORK AND PLAY." MINDFUL OF THE DEVELOPMENT'S BRAVE-NEW-WORLD IMAGE, STEVE THOMAS RECENTLY DROPPED IN FOR A GUIDED TOUR BY HIS FRIEND GRAHAM GUND, ARCHITECT OF THE CELEBRATION HOTEL. STEVE CAME AWAY LIKING IT MORE THAN HE EXPECTED TO. "IT MAY SEEM STERILE NOW, LIKE IT WAS DROPPED FULLY FORMED FROM OUTER SPACE, BUT IN TIME IT WILL ACQUIRE TEXTURE AND A SENSE OF HISTORY," HE SAYS. "ALL YOU HAVE TO DO IS LOOK AT THE ALTERNATIVE—BLAND DEVELOPMENTS SQUIRTED OUT OF A BUILDING MACHINE—TO CONVINCE YOURSELF THAT THE COUNTRY WOULD BE BETTER OFF IF MORE COMMUNITIES WERE DESIGNED AND BUILT THIS WAY."

Steve Thomas and Graham Gund discuss Celebration's town houses

Gund gives Steve a walk through of his Celebration Hotel, which is down the street from a typical "pedestrian-friendly" cafe

KEY WEST NOSE JOB

Every evening around sunset in Key West, the place to be is Mallory Square. "The sun goes down, everyone claps and they all head off to Duval Street to party," says Norm. "Except us—we have to work the next day." That doesn't stop him and the *This Old House* crew from catching the local acts at the square: sword swallowers, snake charmers, fire-breathers and this dude, who's perfected the art of balancing a stove "on his nose" (although his chin seems to do all the work). "That's a new one on me," says Norm. "Maybe we can use him on the Miller kitchen."

PHOTOS, TOP: ANDREW KAUFMAN; BOTTOM: DIANA HAAS

It looks like now, but it's built like then.

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AND CHECK OUT HIS TATTOOS

T.O.H. host Steve Thomas has an affinity for Hawaiian shirts that rivals Norm's love of plaid. He's been accumulating the gaudy garments since a trip to Hawaii in 1984 and insists the other guys on the show are "jealous" of his collection. Yeah, like Tom would be caught dead in purple rayon and dancing hula girls.

PHOTOS: TOM BRUDE (TV NO. BOTTOM); ANDREW KAUFMAN

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ALOHA, AGAIN

VIEWERS MAY RECALL THAT DURING THE HAWAII PROJECT A FEW YEARS AGO NORM AND STEVE TOOK AN EXCURSION TO KALAUPAPA, A REMOTE PENINSULA ON MOLOKAI AND A LEPROSY SETTLEMENT FROM 1866 UNTIL 1969. ALTHOUGH A TREATMENT FOR THE DISEASE WAS DISCOVERED AFTER WORLD WAR II, ABOUT 50 PATIENTS STILL LIVE AT KALAUPAPA, NOW A NATIONAL PARK. RECENTLY, THE PARK SENEFITED FROM ANOTHER *THIS OLD HOUSE* CONNECTION. HISTORIC PRESERVATIONIST BERNIE WEISGERBER—WITH WHOM NORM AND STEVE PACK-MULED INTO THE MONTANA WILDERNESS LAST YEAR—CAME TO KALAUPAPA TO REROOF THE SOCIAL HALL WITH HISTORICALLY ACCURATE CEDAR SHINGLES. HISTORIC PRESERVATIONISTS USUALLY DISDAIN NEWFANGLED PRODUCTS BUT, TO MAKE THE SHINGLES LAST LONGER, WEISGERBER PUT A LAYER OF THREE-DIMENSIONAL PLASTIC MESH BENEATH THEM—A TIP HE PICKED UP FROM HIS OLD PAL NORM. FOR MORE ON THE MESH, SEE "TOP JOB," P. 80.

At Paschoal Hall in Kalaupapa, Hawaii, celebrities such as Shirley Temple, Abbott & Costello and John Wayne once entertained leprosy patients. The newly shingled social hall is slated to eventually become an interpretive center for visitors to Kalaupapa, a national park since 1980.

PHOTOS: TOP, SHARON BROWN; BOTTOM, KEVIN SMITH

PROJECT UPDATE: KEY WEST

With the back porch torn off and the new pool dug, *This Old House*'s Key West project shifts into high gear. FROM LEFT: Richard Trethewey inspects a high velocity flexible-duct air-conditioning system—a necessity in modern Key West. Norm and home owner-architect Michael Miller review plans for the library cabinetry, as cameraman Steve "Dino" D'Onofrio (hidden from view) captures it all on film. Miller and his dog, Managua, take a break from the stress of renovation and stretch their legs. Their destination: the neighborhood doughnut shop, where Managua has been known to go on his own, wait on line and come away with a goody or two.

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CALENDAR

APRIL

1 Bowing to pressure from the National Polka Dot Council, Norm boycotts plaid for a day

2

3

5 Tom does a mobile makeover—outfitting his van with metal shelves and dividers

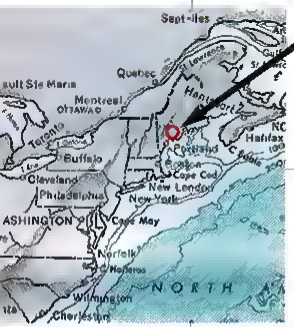
7 Norm cranks up the workshop for a season of woodworking projects

8

9

10 Steve travels to Michigan for the Lansing Housing Fair

12



13 Steve sizes up his new Maine retreat. Step one: Rip out musty old carpeting.

14

15

16 Steve and Norm hit Orlando, Fla., for the National Kitchen and Bath Association Show

17 Tom and Rich check out the Kitchen and Bath Show as well

20

21 Architect gets chosen for the fall project in Boston

24

PHOTO: ANDREW KAUFMAN

25

26 Norm plans his backyard landscaping strategy—with the help of Roger Cook

27

28

MAY

1 *This Old House* teams up with AmeriCares for a home repair project in Connecticut

MANUFACTURERS · MATERIALS · PRODUCTS · RESOURCES · PAGE 181

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This Old House

ASK NORM

"The best thing to do is find a contractor you get along with and who has a good reputation, then wait until he's available."

SHINGLE SEARCH

We're currently renovating a 100-year-old brick bungalow with a stamped steel "tile" roof. It doesn't leak, but a chimney was removed, and a small overhang was reroofed with asphalt shingles. We've searched everywhere for replacement pieces, but no luck. We want to put on a metal roof but can't find instructions and have to do it ourselves because of the cost. This is our ninth renovation.

ANNA ZAGER, *St. Mary, Neb.*

If the roof isn't leaking, and all you need is enough pieces to replace the missing ones, it won't hurt to keep looking. Hit the Internet, contact preservation societies and everyone in your area who has the same kind of roof. Another alternative—one that was used at This Old House's *project in Key West, Florida—is to steal pieces from the back of the house to patch holes in the front, but there we had a new addition to hide the deed. If you have to reroof, forget about standing-seam sheet metal. It isn't a job for amateurs. But there are interlocking metal shingles that might be just the ticket. Contact the Metal Building Alliance for a list of manufacturers. Should you decide to go up on your roof—and I don't encourage you—be sure to have a safe place to stand, a safety line, a harness and insurance. Roofers pay higher rates than anyone else for workman's comp. There's a reason for that.*

WAX FOR FLOORS

In "The Beauty Beneath" [September/October 1998], carnauba rich wax is used on a hardwood floor. Can you tell me a little more about it? Does it make the floors slippery?

DEAN TAYLOR, *Cuyahoga Falls, Ohio*

Carnauba, a hard wax that comes from the leaves of a Brazilian palm tree, is added to the paste waxes that shine and protect bars, bowling alleys and boat hulls as well as floors. It yellows in time. (You've heard, I presume, of the dreaded "waxy yellow buildup.") A nonyellowing alternative is microcrystalline wax, a petroleum by-product. It's expensive, but a very little goes a long way. All waxes need to be reapplied, buffed and stripped periodically, but a floor will last practically forever if given such care. Any wax makes floors slippery, so put antiskid pads under area rugs and avoid running in stocking feet.

BASEMENT HEADROOM

The basement in our 1913 house has 6 feet 6 inches of headroom, and we'd like more. We've thought about lowering the floor, which appears to be 1½ inches of concrete. The basement walls are fieldstone. Can this be done?

CHUCK UDZINSKI, *Stewartstown, Pa.*

Sure, but you're looking at one substantial project. A new floor should be 4 inches thick laid on 8 inches of gravel. That means excavating a foot below the desired headroom. Lowering the floor undermines the foundation, particularly if it's stone, so get engineering advice and proceed piecemeal to avoid digging your way toward structural collapse. You'll have to jackhammer the existing floor, dig beneath a small part of the foundation—praying you don't hit bedrock en route—and pour a concrete footing and wall section. Repeat this process all around the foundation, then pour your floor. A root canal sounds like more fun. You can avoid all this inconvenience and expense by simply raising the house. Disconnect plumbing, heating and electrics, and have an experienced house mover jack it up. Then add to the top of the foundation, lower the house and reconnect everything. You'll have to do some regrading and landscaping to hide the work.

PHOTO: ROBIN SMITH

PAINTER'S CANVAS

My old house was built by my great uncle sometime around 1906 or 1910, and it has canvas-covered plaster walls and ceilings. They have been painted over many times through the years, and no maintenance has been done since the 1970s. Now it's time. The paint in some areas looks like alligator hide, there are some large cracks under the canvas, and there are places where the canvas is pulling away from the plaster. My family and I want to do something, but we're not sure just

what Naturally, we are getting lots of free advice ranging from spackle-and forget to sandblast with dry grit

DOROTHY E PITTMAN, *Carrollton, Ga*

Frankly, I'd be inclined to get in there with a wallpaper steamer and pull all the stuff off That would make patching the cracks simple and leave you with a nice, paintable surface But I'll let Rory Brennan of Preservation Plastering, in Putney, Vermont, put in a word. He's a conservationist at heart, and he suggests using wheat paste to glue the canvas back in place He points out that, around the turn of the century, canvas was used not only to cover plaster cracks but also as a decorative surface—a "canvas" so to speak— for ordinary paint and, occasionally, for intricate artwork Something of that sort could lie beneath the layers of paint on your canvas, which could add to your house's value if uncovered and restored.

FLAT-ROOF WARNING

We're building a house in Reno, Nevada, using structural insulated panels (foam sandwiched between oriented strand board) for the roof The builders are hesitant about our flat-roofed design because of Reno's snow loads, but many commercial buildings there have flat roofs, and we want to have a roof deck. What do you think? Also, would you recommend a roof snow-melt system like those used for driveways?

CATHY BEAVER, *Carnation, Wash*

I've never been a big fan of flat roofs, which—even when built of the best materials—tend to leak, especially in areas with heavy rain and snow. And any leakage in structural-insulated-panel roofs is disastrous Their wood skins don't tolerate moisture (See "Norm's Shop of Dreams," November/December 1997) Whatever the builders say, it's the panel manufacturer's obligation to confirm that the design will handle the loads expected in your area, and it's the local building department's job to approve the plan Forget about using a snow-melt system to reduce snow load. A building inspector will veto any roof design that can't carry the full load And adding a deck? I don't like that idea on a flat roof You run the risk the deck will interfere with drainage, concentrate loads in small areas and abrade the roofing material as it expands and contracts

BETTER WAIT

We will probably be building a new house soon, and we would like to have the name of a reputable contractor who knows what he is doing on all aspects of building a quality home Our budget is $120,000 maximum for a 28-by-38-foot Cape style farmhouse with a separate two-car garage We would be building in North Berwick, Maine We have talked to several contractors so far, but they are either very arrogant or too busy to care My brother-in-law has had several homes built in this area, and he's had the same response

DALE ALEXANDRE, *Sanford, Maine*

You're trying to build during the biggest housing boom I can remember in New England, so maybe the contractors you call arrogant are in fact just busy Also, a house you'll get for $120,000 will be pretty basic, and that means it will be less profitable and less interesting than bigger-budget jobs. If you did find someone who's eager to take the job on now, that should make you wonder why, in this economy, he's available The best thing to do is find a contractor you get along with and who has a good reputation, then wait until he's available You'll probably get a good price and be happy with the job In the meantime, talk to your brother-in-law. After all, he succeeded in getting his houses built

SAGGING FLOOR

In the 1950s, my father-in-law built a lakeside house made of hand split fieldstone with tongue and groove hardwood floors. The floor joists, main beam, second-floor beam and subflooring have now rotted, and the center of the house sags 3 inches How can I remedy this while replacing the main beam?

LARRY D HIBBS, *Laughlin, Nev.*

Old houses, even ones that seem as badly off as yours, seldom just fall into the ground. There's a good chance yours can be saved, but don't do anything until you hire a structural engineer He'll probably notice right away that there should have been a pier supporting the center of the house, just the sort of thing that's left out of a lot of owner-built structures. A decent engineer will propose realistic solutions that fix what's necessary but no more For example, you might think all the joists have to be replaced. An engineer may suggest cutting off their rotten ends and sistering them instead (bolting new wood on either side), which will save time and money He may also be able to recommend a contractor who specializes in the rebuilding of old houses and has the jacks and other tools required

Send questions to Ask Norm, *This Old House* magazine, 1165 Avenue of the Americas, 27th floor New York, NY 10036 Include a complete address and daytime phone number Published letters will be edited for clarity and length and may be used in other media.

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A Restful Room

A cramped bathroom in a Victorian garret blossoms into a spacious spa

BY HOPE REEVES

Every morning for five years, Phil Hurd ambled into the bathroom and bent his 6-foot-4 frame nearly in half to shave. After rinsing the last dab of foam from his chin, he would straighten up and—*thunk*—bang his head against the sharply sloped ceiling above the sink. Tired of the headaches, Phil and his wife, Janet, knew it was time to renovate their 105 year old Victorian or get out. "We contemplated moving for a bunch of reasons—it didn't have a garage, it didn't have a family room, and we didn't like the kitchen or the bathrooms," Janet says. "But we really loved the house and we loved the location." The work would take months and cost them hundreds of thousands of dollars but, after much consideration, the couple decided they were tired of moving. "Now Phil calls the house our FRP—our final resting place," Janet says with a laugh.

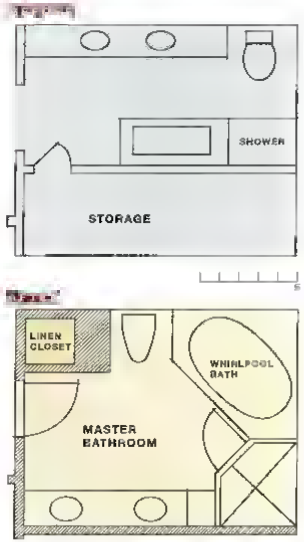
This Old House contractor Tom Silva, his nephew Charlie Silva and brother Richie Silva went to work on the house in historic Lexington, Massachusetts. Starting with the kitchen, they wended their way through

Phil and Janet Hurd's 11-by-14-foot master bath benefits from new locations for the tub and vanity, as well as the addition of two windows. Before, the master bath was gloomy and "not very well thought out," says architect Rick Bechtel. Now, the attic room feels twice as big.

STYLING: KATHRYN O. FREEBURY. BEFORE PHOTO: JANET HURD

PHOTOGRAPHS BY BILL GEDDES

the maze of rooms before landing—10 months later—in the third-floor master bathroom. Last remodeled in the 1980s, it had gray, white and pink walls and similarly cast floors which, along with low ceilings and sharply cut roof angles, conspired to give the room an icky, claustrophobic feel. Janet says the bathroom was "one of the worst areas of the house. Pinks and grays are really not our colors." She was further appalled by the bizarre use of space. "Why would someone put the bathtub in the only part of the room where an adult can stand up straight?" she says. "And the vanity under a 4-foot-high ceiling?"



To remedy the situation, Lexington architect Rick Bechtel flip-flopped the layout, putting the vanity (which Charlie raised 3 inches for the towering Phil) across the room where the tub used to be. Janet, an interior designer, liked Bechtel's overall floor plan but had slightly different designs on the space. "Rick had the toilet on the same side as the sinks. I said, 'Gee, we don't really want that. I think it would be better if we moved the toilet over to the end of the whirlpool bath so we could have a longer vanity,'" she says.

Janet also thought better of Bechtel's plans for low cabinets where the sinks used to be, opting for a linen closet instead. "Jan has very definite ideas about what she wants and has a really good eye," Bechtel says. In the end, the work was a group effort. "With everyone's help," Janet says, "the room evolved into exactly what we wanted."

Exactly what they wanted was a room that feels like a "European spa," complete with a large bubble-jet tub encased in statuary marble, a shower with a bench to sit on, a bigger skylight, marble countertops and floors, a 9-foot-long cherry vanity with porcelain sinks, and brass light fixtures. Another detail Janet refused to give up was the window in the shower. Charlie warned her that water could seep behind the jambs and rot the house's wood frame. But she insisted on having antique stained glass fit the window in the shower and the one above the tub. "The windows really add visual balance and bring together the stained glass throughout the house," she says. Charlie covered the sashes with exterior house paint and caulked the gaps with silicone. If Janet keeps vigilant watch and repaints at the first sign of wear, Charlie guesses the house will be fine. "It's a maintenance issue," he says. "The important thing is that the home owner knows what to do to keep the house protected."

Charlie had a few ideas of his own: new joists for the sagging floor, high-velocity heat and air-conditioning, radiant heating in the floor and walls to keep the mirror from fogging, and a frameless shower door for easier access to the towel rack. ("Even though I don't get to shower here, I still wanted it to be convenient," he says.) Everyone agreed to get rid of the bathroom entrance in the walk-in closet and replace it with one through the bedroom. Although the closet is smaller, the result affords more privacy and enlarges the bathroom by a good 3 square feet. Charlie says the space makes sense now. "It's not like they have a dance floor in the middle here, but if he's over here and she's walking through, there's still plenty of room." The 9-by-4-foot mirror over the vanity makes the 11-by-14-foot room seem even bigger—a feature worth the effort it took to have a crane hoist the glass through the bedroom window.

The neatly finished bathroom was sleek and beautiful but somehow, after all the work, seemed naked. Colorful sprays of flowers across the ceiling and walls made for the icing Janet wanted. Installed by Dracut, Massachusetts, hanger Normand St. Marie, the wallpaper immediately changed the room from stark and chilly to romantic and cozy. "I think the wallpaper gives the room a sophisticated elegance; it softens the straight angles and cold surfaces," Janet says. "It seems Victorian, yet whimsical—like a little retreat."

After nearly a year at the Hurd house, the Silva boys are about done. Gazing at a group of workers sprawled out eating lunch in front of her new fireplace, Janet lets out a sigh. "I love these guys, but I'm ready to have my house back," she says, eyeing the sawdust and power tools strewn around her soon-to-be family room. "I'm dying to decorate, have friends over, host dinner parties. I've just kept telling myself, 'Next year, next year.'" And now that year is here. ■

ABOVE: Charlie Silva wiggles in another (regular-sized) section of cherry vanity, to serve as Janet's makeup table. BELOW: Joe Ferrante lays glazed Italian shower tiles. The last bathroom could have been a poster child for bad workmanship, says Janet, who swore she'd get only the best hands and materials for her new one.

RIGHT: Wallpaperer Normand St. Marie works out the hanging strategy with Janet Hurd. BOTTOM: The trick to making all the bouquets look right side up is to reverse the pattern midway across the ceiling and continue down the facing wall.

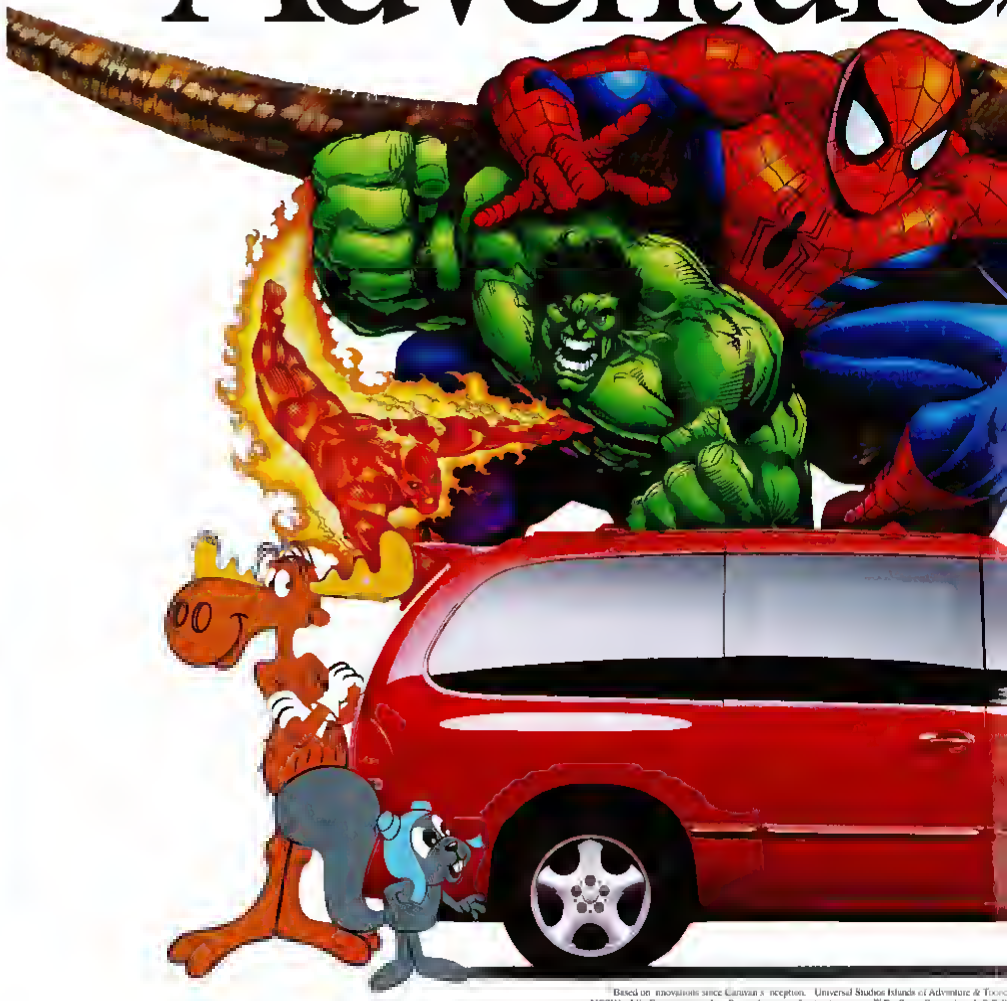
HANG IT AS IT LAYS

The difference between an exceptional wallpapering job and a mediocre one is vision. "You've got to engineer it—lay it out for the client to see," says Normand St. Marie, a hanger from Dracut, Massachusetts. "Otherwise you don't know what it's going to look like until it's up and it's too late." By layout, St. Marie means literally laying out sheets of wallpaper on the floor. He shifts the patterns around and makes suggestions until the home owner, hovering above, decides what works best in the room. They then choose a focal point—in the Hurd bathroom it was the vanity—and St. Marie hangs around it first. Janet Hurd chose to stagger the bouquets rather than lay them side by side, which she says seemed too predictable. Papering sloped ceilings also demands careful eye. St. Marie suggests reversing the paper at some point so the pattern never seems upside down. And whatever you do, go on appearance instead of strict measurement. Wallpaper installation is a case where if it looks right, it is. "I love it," Janet says, inspecting the finished room. "You see how the flowers frame the mirror and then seem to just sweep across the ceiling."

WALLPAPERING PHOTOS: JOE VITKINS. INSTALLATION PHOTOS: KELLER & KELLER

The Hurds' third floor master bathroom became just what Janet had imagined: "somewhat luxurious, still practical but without being too typical." The sloped ceilings and Victorian details of the bath are echoed in the adjoining master bedroom

Adventure



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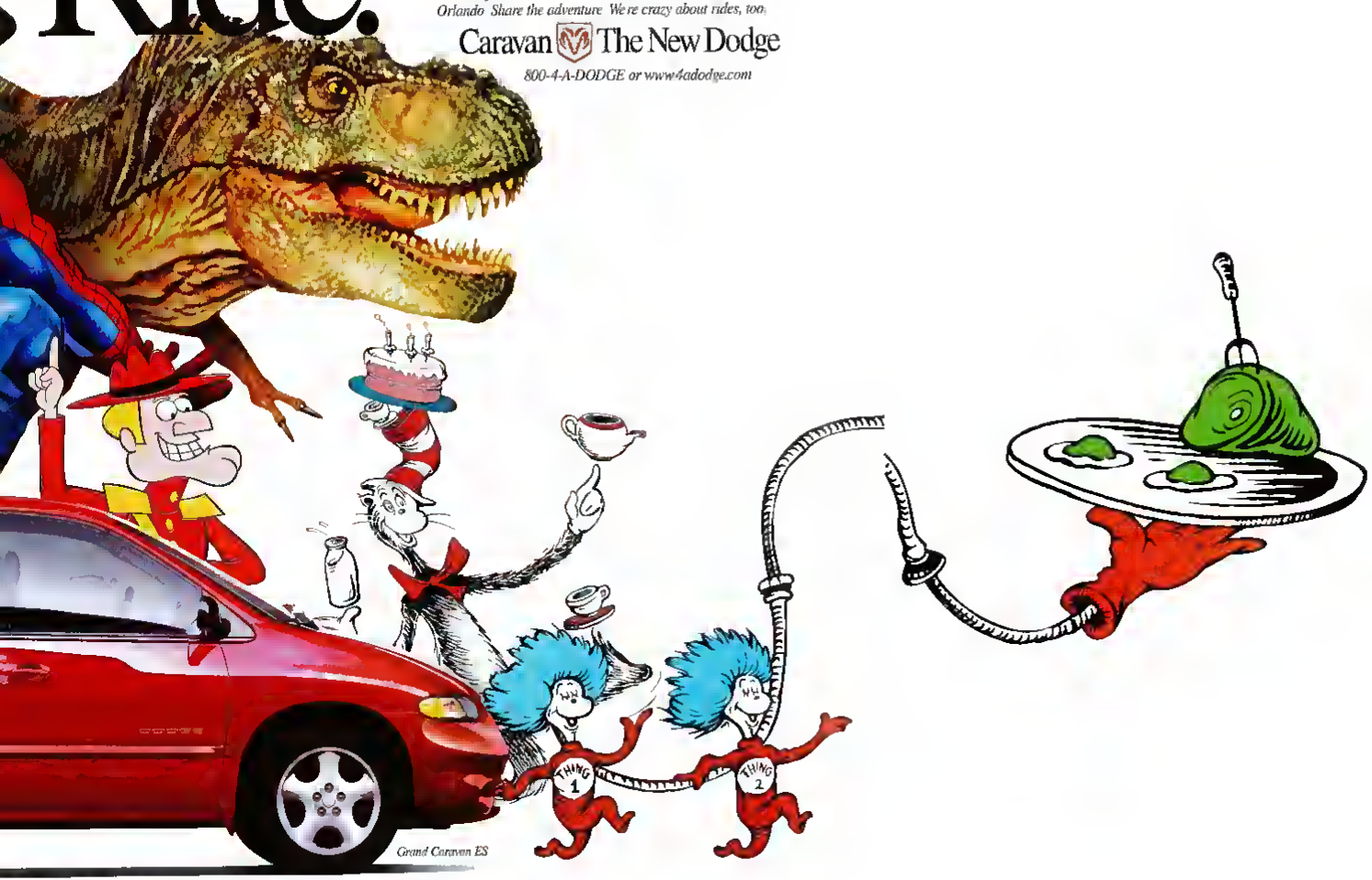

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The Road Home

Driveways deserve more than just plain paving

BY CURTIS RIST

A concrete driveway softened by a grass center strip and shaded by eucalyptus trees makes for a scenic approach to an old Tudor in Pasadena, California

Our houses may vary in style and grandeur, from frugal saltboxes to palatial Georgians, yet all are united by a common feature: their driveways. But for the most part these miniature lanes—whether long or short, headed for the cottage or the castle—are as plain and uninteresting as the roads they run to. Instead of being artfully designed, driveways are treated like lowly utilities, dutifully brought to a house with the same lack of celebration that accompanies stringing up a telephone line or sinking a sewer pipe. To architect Robert A.M. Stern, that's a mistake and a missed opportunity. "A driveway is one of the first impressions people have of a house, indeed of the whole property. It's important to make the most of it."

Before the automobile, wealthy home owners built scenic carriage roads that looped by grand front entrances on their way to the stables. Middle class families living in towns came and went along simple footpaths that led to Main Street. But the car changed all that. As the horseless carriage became more affordable, people began shoehorning driveways and garages into their lots, no matter how small they were. Today, of course, we come home through attached garages that are mere steps from the mudroom or kitchen. "In an age of convenience where people insist on parking as close as possible to where they're going, the driveway has found itself literally on the doorstep, like a stray cat," says architect Bill Kaufman of Wesketch Architects in Liberty Corner, New Jersey. "We can—we must—do better."

Half the challenge in creating a beautiful driveway is giving it the proper layout. Granted, that's an easier task on a 20-acre country estate than on a tight quar-

PHOTOGRAPH BY DAVID ALSANESE

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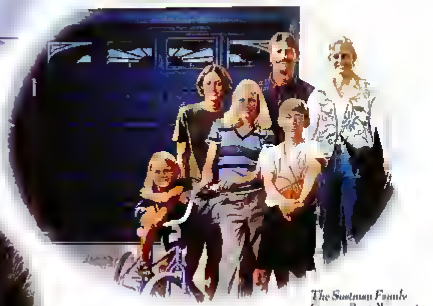

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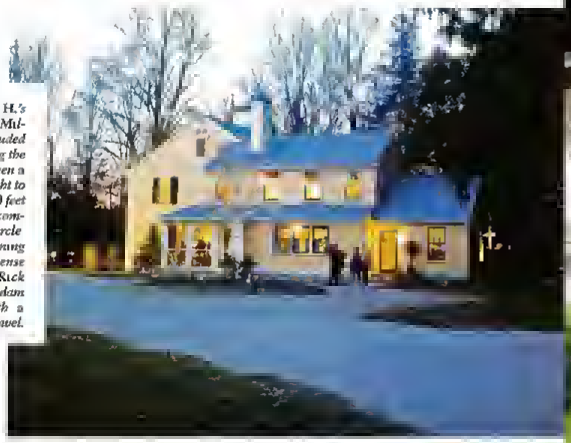
ter-acre lot, but it's possible in either case, the experts say. As drivers approach the house, a longer driveway can lend a sense of expectation, says Stern, by gently winding and making the most of vistas and views along the way. A driveway that bends also slows traffic to a safer speed.



The renovation of T·O·H.'s 1997 Dream House in Milton, Massachusetts, included rerouting and upgrading the driveway. What had been a short lane leading straight to the barn now winds 350 feet across the front yard, complete with a turning circle. "It's much more welcoming and gives a dramatic sense of arrival," architect Rick Bechtel says of the macadam roadway topped with a layer of sand-colored gravel.

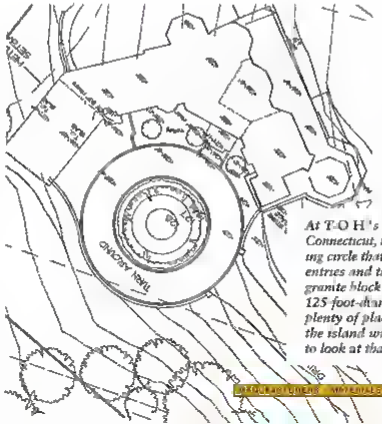
On a smaller lot, a driveway that takes up more, not less, of the front or side yard can be more useful and better looking. "You want a driveway not just as a way to reach the garage but as an overall access that lets guests, as well as the delivery guy, know exactly what door they're supposed to head for," says Stern. This can be achieved with a small turnout that provides one or two parking spaces near the front door, giving guests an obvious place to pull in and keeping them from having to park on the street. "Visitors won't have the feeling that they could just as easily join the pizza man and peel off to the side entrance or into the garage," says Stern. Except for the finest houses on ample lots—such as the *T·O·H* Dream House designed by Stern for a 2-acre hillside property in Wilton, Connecticut—circular drives should be avoided. "They're too pompous for the average house and take up too much space," he says.

Another design challenge comes in surfacing the driveway. Although asphalt has its place—especially for children riding bikes, playing hopscotch or shooting hoops—there's a broad palette of other materials to choose from. Stern likes gravel. Blue-gray gravel driveways create a more casual feel, he says, and "white gravel would be especially appropriate near a beach. There's even a red gravel, which helps make the driveway blend into the landscape and is lovely out in the country."

Besides its good looks, gravel costs less than asphalt and, says Kaufman, "it feels nice and soft." He has come to prefer ⅜-inch river-jack stone as the final topping over a layer of stone dust mixed with crushed rock. "A texture like that, along with good form and landscaping, turns a driveway into a pleasant space, as opposed to just a means to an end." In cold climates, gravel can get churned up by snowplows, but that doesn't make it a bad choice. "For a lot of people, raking a few stones from the lawn in the spring isn't much of a problem compared to the cracking and heaving of an asphalt or concrete driveway," says Kaufman.

Concrete paving is popular in warmer climates, but the challenge with this material, says Stern, is to break up its monotonous surface "so it doesn't look like the interstate." He likes to embed brick, paving blocks or stone in concrete to create patterns and give the surface more texture and character. A similar strip out by the street, called an apron, can also make an elegant transition to a paved or gravel drive. Says Stern: "It's one more way to lay out the welcome mat."

Careful landscaping along the edges of a driveway can help it blend into the overall look of a yard. Lining both sides with cobblestones creates a more formal look. A landscape border dotted with low shrubs or flowers between expanses of mulch or ground cover makes the route appear more naturally a part of the land it crosses. "Makes mowing easier, too," says Stern. Lighting also helps mark the way but, as with all aspects of a driveway, the subtler the better. "If you add lighting, keep it low and use it just to define the edge," says Stern. "Remember, it's a driveway, not an airport runway."



At T·O·H.'s 1999 Dream House in Wilton, Connecticut, there's plenty of room for the turning circle that runs by the main and secondary entries and the three-car garage. Edged with granite block and covered with pea gravel, the 125-foot-diameter roundabout will give guests plenty of places to park. Trees and shrubs in the island will give visitors something nicer to look at than a trio of garage doors.

ILLUSTRATION: ROBERT A.M. STERN ARCHITECTS; PHOTO: KELLER & KELLER

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Clear Finishes

The best choices for making old wood shine

BY JOSEPH D'AGNESE

Like many houses of its period, the 113 year-old Victorian that T O H renovated in Watertown, Massachusetts, is a cathedral to the glory of exposed wood. Everywhere you look—around the doors and windows, along the base of the walls, over the floors and up the stairway—there are lustrous expanses of amber-colored wood, much of it clear quartersawn oak. During the renovation, Silva and his crew carefully removed the mantel with as much other woodwork as they could, repaired it and then let home owners Christian Nolen and Susan Denny strip it all. When the plastering was finished, Silva put it back. This trim was simply too good to throw away.

And too good to paint. A coat of paint is an effective way to preserve wood and hide all sorts of imperfections, but a clear finish is the perfect complement to fine wood and workmanship. With these see through coatings, every stroke of a brush or swipe of a rag awakens wood's color and grain, protects against the dulling effects of sun, water, dirt and abrasion, and imparts a pleasing warmth, depth and shine.

"The mantel is like a piece of furniture," says T O H contractor Tom Silva, referring to the stunning white oak mantelpiece in Watertown. "It's absolutely gorgeous." Painter John Dee gave it a finish befitting its craftsmanship: four coats of pale shellac followed by a French polishing.

But a basic question—which finish to use?—confounds many home owners. Go into a paint or hardware store, and there will be shelves upon shelves of products promising a perfect finish—orange shellacs, spray lacquers, water-based polyurethanes, spar varnishes. It's enough to make one head off to the paint aisle. But to painters like John Dee, who refinished most of the wood in the Watertown house, the profusion of choices is a blessing because they can tailor the finish to the job. "It's like selecting a fine wine to go with dinner," says Dee, who has been painting professionally for 27 years.

As with wine, finding the right finish takes research. So before he cracks a can or touches a brush, Dee first asks himself a few questions. How much protection does the wood need? (A playroom with three kids needs more than the

PHOTOGRAPHS BY KELLER & KELLER

living room of an empty-nester) Does it have to match the color and sheen of another surface? How dusty will the work area be? Once he's figured out the qualities he's after, it's easier for him to pick the finish that works.

To simplify the search, Dee divides the world of clear finishes into four basic types: oil, shellac, varnish and polyurethane. Oils soak into wood for a rich, low luster that looks equally good on casual pine and formal cherry. They are easy to apply, easy to clean up and easy to repair when scratched but must be regularly maintained and offer little protection from water or wear. That's why any serious discussion of finishes inevitably turns to the hard stuff—shellacs, varnishes, polyurethanes—which form a reflective, durable film on the wood surface.

The variations in color and sheen among the four basic finishes are subtle, so Dee brushed them in stripes on a closet door, then auditioned them before Nolen and Denny. In the end, their choices were refreshingly simple: modern, high-tech polyurethane to protect floors and doors against water and wear, ancient low-tech shellac to beautify everything else.

Polyurethane, the most durable and scratch-resistant of the brushable finishes, stands up to hot pots, water splashes, and a battery of household chemicals and acids ranging from cleansers to orange juice. "Look for horizontal surfaces," Dee says. "If someone can step on it or spill a martini on it," says Dee, "go with poly." That same toughness has a downside, too. If it gets scratched or dinged, it's difficult to repair and no fun to strip. "People use poly when they want something protected once and don't want to think about it again," he says. Oil-based polyurethane also dries slowly—a quality it shares with varnish and oil—which leaves it vulnerable to dust. Because of the daytime chaos at Watertown, Dee and the floor refinishers found it best to apply the finish at night. And then there are the fumes, which oil-based polyurethane generates in toxic abundance. Good ventilation is a must for at least a week after application.

With quick sweeping dabs of a shellac and-lacquer-dampened pad, Dee gives the mantel a French polish, bringing the antique wood to a high state of shine.

For the remaining woodwork in the house—the staircase balusters and spindles, the wainscoting in the front entrance, the baseboards and that kitchen mantel—Dee cracked open the bug juice. Shellac, the refined secretions of the Asian lac bug, has been the darling of wood finishers since the 1830s, when it first became widely available. Shellac was the original finish in the Watertown house, and it remains the choice of most historic restorationists, despite its foibles. Condensation from, say, a frosty glass of lemonade easily softens it, leaving a telltale white ring. And liquid shellac has a short shelf life, about six months in the can, after which it won't harden properly. To avoid this, Dee uses dried shellac flakes, which keep indefinitely, and just mixes up a batch the day before he needs it.

Still, craftsmen adore this finish. It doesn't clog up brushes; it is simple to touch up and requires no between-coat sanding; wet shellac melts seamlessly into dry. It infuses wood with amber tones ranging from the lightest blond to a buttery orange, and in its dewaxed form is compatible with other finishes. (It's often used to warm up wood that will be coated with clear polyurethanes.) The issue of toxicity is moot. Dried shellac itself is edible.

THE ART OF MAKING NEW WOOD LOOK LIKE OLD

By the time Tom Silva and his crew finished replacing the woodwork in the kitchen pantry and on the staircase, John Dee had his work cut out: to make old and new wood match. On the stairway, he solved the problem by using two different shades of shellac—super blond on the honey-colored old wood; orange on the pale new. After two coats, it was hard to tell which was which.

In the pantry, though, Dee faced the reverse problem. The old oak trim and built-in bench had to be made darker to match the new oak cabinets in the nearby pantry. So before he touched anything, Dee created color samples on scrap pieces of old oak. Ordinary walnut stain, with just a dab of red Japan colorant, gave a close match but set quite dark enough. A second coat of stain would have made the wood's pores too dark. Enter paste wood filler, a linseed oil thickened with ground quartz or silica, normally used to fill open-pored woods such as oak, walnut and mahogany. Dee added Van Dyke brown tint and racked up more hours experimenting with different ways to get the desired hue.

After a few days stippling and sanding, Dee brushed on the stain, above left, waited five minutes, then ragged it off. He repeated the process with the paste filler, wiping across the grain, then applied three coats of polyurethane. When he finished, the century-old wood married harmoniously with the factory-fresh pantry. "The home owners are happy," says Dee. "The cabinets look like they've always been there."

Durability determined the mix of clear finishes on the oak staircase at the Watertown house. The scuff-prone treads have three coats of oil-based polyurethane, one of the toughest finishes around. All the remaining wood—spindles, hand rails, risers and newel post—is swathed in shellac, a more delicate but easily repaired coating.

On this day, Dee shows up hell-bent on giving the stunning oak mantel in the kitchen a final shellacking. He's already done three coats, sanding only after the first coat to remove a little fuzz of raised wood grain. Quickly and deliberately, he applies long strokes of wet shellac with a 3-inch china-bristle brush, taking care to overlap on a wet edge and to wipe away drips. Then he works the bristle tips between the delicate dentils above the frieze. Two rooms away, floor sanders roar. Unfazed, Dee keeps working. "That's one reason I'm glad to use shellac for this job," he says. "It dries so fast I don't have to worry about the dust."

When the surface hardens 30 minutes later, Dee uses 400-, then 600-grit, waterproof sandpaper and naphtha to wet-sand the last coat into perfect flatness. He wipes off the residue and returns later for the finishing touch—a French polish worthy of a fine antique. First, he lightly moistens a gauze pad with padding lacquer (wet shellac with a touch of lacquer resin); then he gently buffs the pad along the mantel top, each quick stroke reminiscent of a plane making an aborted landing: lower, lower, *touch down*, up again, repeat. Polishing strengthens the previous coats of shellac and lays down an even shine that grows more luminous with every stroke. By Dee's third pass, the mantel casts a honey-colored light into the room. Later, Nolen and Denny can't resist running their hands over the mantel's gleaming silky surface. "Ah," Nolen says, "this is why we got coasters for Christmas." ■

CLEAR FINISHES at a Glance

OIL

Makeup: *Tung-nut or flax-seed (linseed) oil, sometimes mixed with mineral spirits.*
Pros: *Applied with a rag. Easily repaired.*
Cons: *Provides marginal protection and requires regular maintenance. Slow drying. Rags can combust if piled up.*
Dee says: *"Casual, roll-with-the-punches, laid-back kind of look."*

SHELLAC

Makeup: *Lac bug secretions and alcohol.*
Pros: *Quick-drying. Nontoxic. Easy to repair and strip. Compatible with other finishes.*
Cons: *Short shelf life. Vulnerable to water, solvents and heat. Brittle.*
Dee says: *"Nectar for wood, yet tricky to brush. Doesn't run or sag but leaves lap marks if you don't maintain a wet edge."*

OIL VARNISH

Makeup: *Alkyd resins in soy, tung or linseed oil and mineral spirits.*
Pros: *The beauty of oil with good resistance to water. Easy to strip.*
Cons: *Requires good brush skills to prevent runs and sags. Takes a long time to dry.*
Dee says: *"Provides good protection for interior surfaces and develops a nice shine after hand-rubbing."*

SPAR VARNISH

Makeup: *Phenolic resins mixed with soy, tung or linseed oil and mineral spirits.*
Pros: *Flexible. Stands up to ultraviolet light.*
Cons: *Lower abrasion resistance than oil varnishes. Slow drying; watch out for dust.*
Dee says: *"The best finish for exterior surfaces because it moves with the wood."*

WATER-BASED VARNISH

Makeup: *Acrylic or polyurethane resins suspended in water.*
Pros: *Low fumes. Quick drying. Easy clean-up. Breathes better than oil-based coatings.*
Cons: *Raises wood grain. Won't cure properly in cool temperatures or high humidity.*
Dee says: *"Non-yellowing, so it doesn't change a wood's hue or the color of a pastel or pickle stain."*

OIL-BASED POLYURETHANE

Makeup: *Synthetic resins made of long chain polymers blended with varnish oils (tung, soy or linseed) and mineral spirits.*
Pros: *Outstanding ability to resist water, abrasion and cracking.*
Cons: *Difficult to repair or strip.*
Dee says: *"The best all-around finish for durability, ease of application and looks."*

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BY JOSEPH D'AGNESE

Mosaic Mystique

Painstakingly laid by hand, tiny tiles tell a magnificent story

It wasn't the studded mahogany front door that stayed in Nina Albert's mind after she and her husband, William, visited the Palacio de Lebrija, a 15th-century mansion turned museum in Sevdle, Spain. Nor was it the staircase trimmed with coffered woodwork, nor the rich wall paintings, impressive as they were. What Nina remembers best is stepping into the courtyard onto a field of ancient mosaics. At her feet swirled mythological scenes of the seasons, Zeus and his paramours, the Cyclops, as vibrant and vivid as when craftsmen first assembled them almost 2,000 years ago at nearby Italica, the first Roman settlement on the Iberian peninsula. The well traveled couple had seen mosaics on trips to Greece and Italy, even the Roman baths in England, but nothing enchanted them like this oasis in Spain. "They were simply breathtaking," says Nina. "I was awestruck by the exquisite detail created with those little stones."

Back home, renovating their Philadelphia condominium, the Alberts realized they had the ideal canvas for that classic art form: their master bath. Because mosaics are unaffected by humidity or water, bathrooms are among the best places for them, although entryways, outdoor patios and pools are all accommodating habitats.

At their request, mosaic designer Michael Golden drew up a 5 by 6 foot mural of the Tuscan countryside. Golden, who has adorned nearly 1,000 homes with his stone and tile creations in the last 12 years, calls the effect of mosaics magical. "The chips in a mosaic never lie completely flat. In one panel, you might have thousands of little facets

In Nina and William Albert's master bath, a mosaic mural of the Tuscan countryside makes an elegant focal point. The pattern on the tub surround and border at the ceiling line are mosaic work also.

PHOTOGRAPH BY NOAH GREENBERG

TOM SILVA SAYS:

"If you want a mosaic to last forever, make sure you have the right substrate: wire lath and mud, or cementitious board."

need ever know about the sensual side of old Pompeii. On military campaigns, Caesar's foot soldiers carried mosaic flooring for the emperor's tent, a mote stately—and far more sanitary—choice than pelts or hides. And the 6th-century church of Hagia Sophia in Istanbul shimmers still with glass-and-gold-leaf mosaics, a hallmark of Byzantine church interiors.

A simple mosaic design in a guest bath at the This Old House *Watertown project (above) is far less costly and labor-intensive than a complex pattern, but still provides classic style; slight variations in the color of the tesserae give the plain field a distinctive character. More idiosyncratic is the car adorned by an artist in Key West (below). Using salvaged pieces of broken pottery, glass and tile, Lenny Addorisio labored for three months to turn an old Alfa Romeo into a sculpted work of mosaic art.*

By their very nature, mosaics connote luxury. In ancient times, only the very wealthy could afford to commission such painstaking and time-consuming work. Even today, each mosaic creation, regardless of its complexity, must be made by hand. The best mosaicists, working at top speed, can crank out a mere 2 square feet a day. A foot-square area may contain anywhere between about 225 and 900 different-colored tesserae, as the tiles are called. The cost of the material alone can range from $10 to $100 a square foot for uncomplicated flooring fields, while elaborately artistic custom panels like the Alberts' Tuscan mural run as high as $250 to $450 a square foot—and sometimes beyond. (Many high-end bathroom and tile shops offer a line of mosaics and can assist customers from design to installation.)

Fortunately, modern techniques allow mosaics to be mostly constructed in a shop and transported, so that installation is simplified. Also, designers like Golden seek to keep a client's costs down by combining stone, glass and ceramic tile mosaics with surfaces that don't require such laborious handwork. Golden might cover a floor with a mosaic border enclosing large fields of one-color sheet mosaic, stone slabs decoratively cut by water-jet or embellished by a scagliola technique in which stone is engraved by hand and the grooves filled with colored marble-dust paste. Mosaics used this way do more than decorate a room; they make it

PAST MASTERS

Ancient mosaic work—such as this 3rd-century scene of the wine god Dionysius pulled by leopards, found in a Roman villa in Paphos on Cyprus—resembled a game of beat the clock. Artisans of the Mediterranean basin smeared layers of successively finer mortar (two on floors, three on walls), the last containing marble crushed to a fine powder, which dried white and had greater adhesive properties. Working quickly, they sketched the image in damp mortar and began inserting tesserae, racing against the mortar's drying time, while nearby apprentices cut stone and swept away debris. Several artisans might work on the same project, each with a distinctive style that an archaeologist can discern.

PHOTOS, TOP LEFT: KELLER & KELLER; BOTTOM LEFT: ROLIN SMITH; RIGHT: DANIELLE HAYES.

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Designs can be as simple as the classic key border that reflects mosaics' Greek roots. Other motifs are perfectly literal—a leaping fish or dolphin to adorn a pool bottom, an art deco portrait of a woman with roses in her hair, urns bedecked with flowers, ropy vines sprouting grape leaves, the family crest. Golden recalls one pair of clients who wanted images of potted lemon trees installed in their bath. He improvised a single lemon falling from a tree, the clients loved it.

Golden's final designs, including specs for the approximate color scheme and the stone, glass or tile to be used, are sent to a fabricator. The Alberts' design went to Virginia-based New Ravenna, a company founded by artist Sara Baldwin. Each day for a month, Greg Lee, one of Baldwin's 45 mosaicists, knelt over the growing Tuscan scene spread out on the floor. One by one, he selected precut, one centimeter-square tesserae and pressed them onto the tacky tape backing, sometimes using nippers to shape them into slender slivers, ovals or trapezoids to more precisely suggest the forms of a curling wrought-iron pergola, or the shadows created when light falls upon climbing wisteria. Like any artist, he stopped often to assess and alter his work. A mountain fashioned of a single shade of green stone looks dull and unrealistic, Lee knows that flecks of a different shade will suggest rolling hills and make it come alive. An oil painter can build up paint on his canvas or mix a new batch of color to his liking. But Lee, constrained by his medium, must blend colors by subtraction, plucking out each offending pixel and replacing it with a new one.

Color is always a big challenge with mosaics. Finished mosaics may not match the hues on the original illustration precisely. Glass and tile, man-made products, are easier to color-match. But every stone tessera differs, however infinitesimally, from the next or it wouldn't be natural stone. A good mosaicist keeps variations to an acceptable minimum, but home owners must expect deviations—and, in fact, should cherish them. "You're always going to get a one of a-kind piece," points out Adele McIntyre, New Ravenna's sales manager. "We didn't make the stone, God did."

Finished mosaics are covered with plastic tape, front and back, cut into easily handled sections and shipped to the site. Installers usually lay out the sheets first to make sure they've got the pattern arranged correctly and that the client approves. If the mosaic is going on a floor, installers use chalk snaplines as guides. Working outward from the room's center, they peel off the backing tape, apply thin-set to both tile and floor, then set the tile. Wall mosaics are affixed using mastic. Grout is added only later, when the adhesive has cured. "It's definitely harder work than installing regular tile," says New Ravenna's Baldwin. "The installer needs to be very thoughtful. You don't want someone who wants to get in and out quickly."

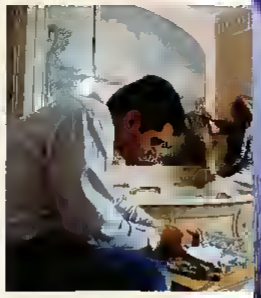
Case in point. It took nearly four days to install the Alberts' mural and other mosaic work. Stopping to watch the progress, Nina Albert is struck by the level of craftsmanship. "Tile bathrooms are okay," she admits, "but to have a bathroom with mosaics and marble, it's like having a little bit of heaven right here."

That joy should last a long time. "Stone conveys strength, and mosaics themselves have a tremendous history. People always ask, 'How long will it last?'" says Golden. "I tell them, 'Ask the Romans.'" ■

PUTTING IN THE PIECES

Installing a mosaic is no less painstaking a task than fabricating it. When the Alberts' 5-by-8-foot Tuscan mural arrives in Philadelphia, it has been cut into four panels for easier shipping. Installer Kostas Partsinevelos cuts the panels into still smaller sections to make them easier to work with, then peels off the backing tape to inspect for missing tesserae. If he spots a gap, he sets a new chip using nippers (left) and reinstalls it from the underside of the mosaic.

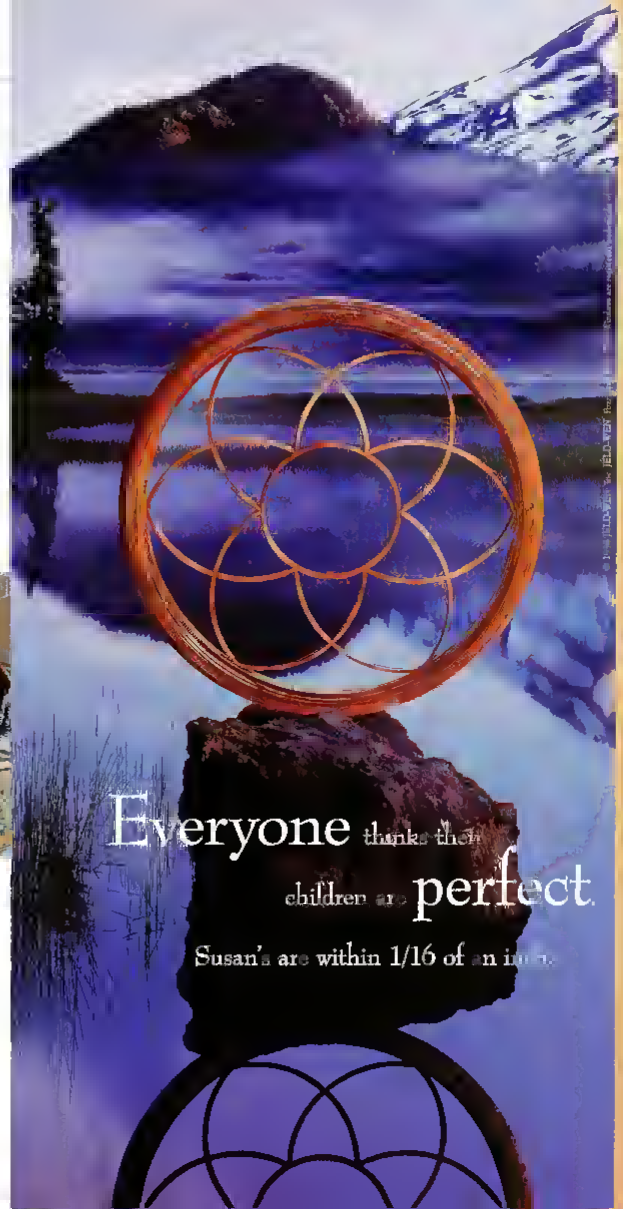
Ceramic tile chips—such as the purple pieces used to create the climbing wisteria—are thinner than the surrounding marble tesserae. To make them cling to the wall better, Partsinevelos applies a thick layer of mastic to these small areas first (right). Then he applies a thin layer of mastic to the entire section and a second layer to the wall, and sets the section in place.



Two days later, Partsinevelos and his assistant peel off the face tape—an arduous two-hour process—and inspect every single tessera, making sure it sits flush in its adhesive bed. Occasionally Emmanuel Viteroulis (left) picks out chips using the point of a child's school compass and resets them. The two also scrape away excess mastic and cut tiles to replace any missing tesserae. They'll return a day later to grout the surface. Total work time for the mural, tub surround and other mosaic work in the bath: four days. "You must be patient," says Partsinevelos. "And you must have an artistic eye."

PHOTOGRAPHS: NOAH SHERWOOD

FOR SOURCES, SEE DIRECTORY, PAGE 101



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Back on Track

A few simple exercises for keeping garage doors healthy

BY JOSEPH HURST-WAJSZCZUK

ABOVE: *Considering that garage doors open and close hundreds of times a year, it's no surprise that the operating hardware needs regular upkeep.* BELOW RIGHT: *Proper care starts with some light oil on all the moving parts.*

Like people, garage doors get a little creaky with age and need the right care and feeding to ward off illnesses and breakdowns. Hinges become stiff and arthritic, springs slacken and sag, rollers wear out and run rough. But unlike fixing people, curing these and other ailments is simple and straightforward. A replacement part here, a little oil there and a few adjustments will transform a squeaky, balky door back into a smooth operator.

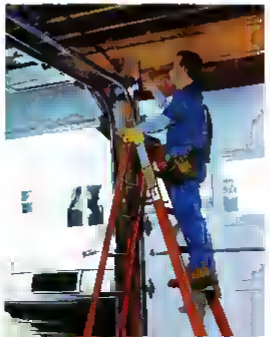
That's what Tom Fennimore does. In 10 years with Jaeger Overhead Door in northern New Jersey—he's now the chief installer—Fennimore figures he's put in or repaired more than 2,000 garage doors. "Lifting one shouldn't make you break a sweat," he says. Nor, he adds, should a door get so sluggish that it overloads and stalls an automatic opener. But when a door does turn troublesome, home owners call in Fennimore for two or three hours of doctoring, mostly to cure illnesses caused by benign neglect. "Ninety percent of the repairs I do could have been avoided with a little maintenance."

Today, Fennimore is in a detached garage in Millburn, New Jersey, diagnosing a pair of doors his company installed more than 15 years ago. Over time, he says, temperature extremes and vibration can loosen screws and bolts in hinges, pulleys and track attachments. Fennimore usually just picks up a socket wrench and tightens everything, but he always brings replacement hardware because "frozen bolts love to snap." He also checks the hinges for twists or tears, symptoms of metal fatigue that only new parts can remedy.

Fennimore next reaches up and yanks on a short cord to disconnect one of the doors from the chain drive of the automatic opener. Major problems with an opener—such as when it simply won't open or close or doesn't respond to the handheld clicker—usually require professional attention, he says. But home owners can take care of basic maintenance by periodically oiling the chain and, if necessary, tightening it or a loose motor belt.

After going over the automatic opener, Fennimore tugs on the bottom handle to see how easily the door comes up. "A damaged hinge or a worn roller will hang itself up when it hits the curved part of the track," he says. Usually, the rollers are the first to go, their ball bearings chewed up by driveway grit. Nowadays, many manufacturers use self-lubricating bearingless nylon rollers, but Fennimore still favors metal. "With a little oil, these guys can last forever."

TOP: *Removing a door roller requires bending out a track edge and doing a little prying. Then the axle just slips out of the hinge.* MIDDLE: *Raising the door relaxes the extension springs and makes them easy to take out and replace.* BOTTOM: *A length of soft rubber weatherstripping keeps a wood door away from the rot-inducing moisture always present in concrete.*



Replacing a roller takes just a few seconds. Fennimore pops the wheel off the track, slides the axle out of the hinge and slips in a replacement. To change a hinge, he undoes a few bolts, pries it off the door and puts on a new one, all in a matter of minutes.

Spring maladies are unmistakable. "If your door suddenly gains weight, or you happen to hear what sounds like a shotgun blast out in your garage, it's probably one of the springs," says Fennimore. Springs all but neutralize a garage door's considerable weight, anywhere from 120 to 180 pounds depending on size and material. Extension springs, the most common, run parallel to the tracks that guide both sides of a door. (See illustration below.) Torsion springs hang crosswise above the door and work by winding and unwinding themselves like a giant window shade roller as the door moves up and down. Most of the work on torsion springs needs to be done with the door closed and the spring fully loaded—not a job for do-it-yourselfers. "If something slipped, the spring could snap back and nip your finger or worse," says Fennimore. "Better to leave that to a pro."

Replacing a broken or stretched-out extension spring is far easier and safer. After raising the door to relax the springs and clamping locking pliers onto both tracks to keep it from falling, Fennimore unhooks one of the 2 foot springs and gives the pulleys a long, hard look. "If the bearings are shot, the door will shudder when you open it," he says. When a pulley needs replacing, the axle it runs on comes apart quickly and easily.

Returning to the springs, Fennimore notes that, while only one may be bad, they should always be replaced in pairs. "Springs are like a pair of shoes, when one wears out, the other is soon to follow." Using a mismatched pair can cause an otherwise healthy door to bind and can stress other components.

With extension springs, one size does not fit all, and bigger isn't always better. Oversized springs can make a door fly up too fast yet fight you all the way down. Fennimore determines the correct replacement by eyeing the diameter, length and wire gauge of the original but says home owners should bring theirs to the store. The supplier may also want to know about the door itself, so Fennimore advises jotting down its dimensions and what it's made of.

Fennimore steps back and checks his work. "Not all springs are created equal," he says. If the door tilts to one side, he adjusts the lifting cables to equalize spring tension. Properly balanced, a garage door should almost lift itself and stay open about 3 feet off the ground.

The last thing Fennimore does on the springs is purely for safety. If one of them broke, it could send shrapnel through a windshield or even a wall. "I once saw ones that were knocked off a kitchen wall," he says. To contain the energy of a break, Fennimore installs a pair of safety cables. He bolts a length of steel cable to each track near the top of the door opening, threads the cable through the spring coil and wraps the end around the support bracket. "The cable's cheap insurance," he says. "For less than $20, it might save somebody's life."

Compared to worn-out bearings or a shattered spring, rust may seem benign, but it's a silent killer that can steal years from the hardware's life. Fennimore recommends spraying the track, pulleys and springs with oil four times a year to fight rust and to quiet squeaks. Grease, he says, is a no-no. "It catches grit, which ruins bearings in no time." To keep rollers running smoothly, he trickles a few drops of oil into the tracks. Whenever the door opens or closes, the rollers pick up the oil, which then flows into the bearings. "I use motor oil," he says, "but even cooking oil does the trick."

FOR A SMOOTH, SAFE RIDE

ILLUSTRATION: GREGORY HENRICH

1. **SUPPORT BRACKET:** Tighten fasteners, coat with oil.
2. **TRACK:** Oil roller groove. Tighten fasteners, straighten bends.
3. **EXTENSION SPRING:** Coat with oil, check for weak spots.
4. **SAFETY CABLE:** Install if missing, check attachments on existing cable.
5. **PULLEY:** Check for smooth rotation, replace as needed; oil axles.
6. **ROLLER AND HINGE:** Check condition, replace as needed, oil roller wheel and axle.
7. **LIFTING CABLE:** Check for fraying; adjust to correct door imbalance.

PHOTOGRAPHS BY MICHAEL GRIMM

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The Deed Is Done (Or Is It?)

The house you own might belong to someone else

BY MICHAEL SHAPIRO

Soon after Nancy Babcock and David Walker bought their turn of the-century house in Bethel, Maine, they got a letter from a lawyer for someone claiming to be a former owner. They were mystified because they'd never dealt with this person, much less met him or even noticed his name on the deed or any other documents. But the couple were shocked by what they read. According to the lawyer, someone, presumably the person who sold the house, had forged his partner's signature at the closing and made off with the money. Left with nothing, the cheated owner demanded compensation.

After recovering from an initial rush of panic, Babcock contacted the company that had sold them title insurance. A few months later, the company paid the defrauded owner his rightful share of the proceeds—$16,000—in exchange for a release of his claim. "They were great," she says of the way the insurer solved the problem. "They took care of everything and saved our house."

Like most buyers, Babcock and Walker had paid for a title search and bought the insurance because their mortgage lender required it. But until their ownership was threatened, they—like many home owners—had only a vague understanding of just what the policy covered. While theirs was the rare case, title problems do crop up, sometimes years after the deal is done. As Babcock and Walker discovered, their $66 policy proved to be a bargain.

"Title insurance is the only way to protect a buyer from other people claiming an interest in the house," says George Metzger, chairman of First American Title Insurance Company of New York. Like Babcock and Walker, most home owners can't avoid buying it, because lenders typically require a fresh title search and a new insurance policy whenever a house is financed or refinanced. People paying all cash for a house can, if they choose, avoid what they may see as an unnecessary expense. But for its nominal, one-time cost and unlimited term, it's a smart piece of protection from anyone who

ILLUSTRATION BY JONATHAN CARLSON

shows up out of the blue, property claim in hand, demanding money or even the right to use, enter or cross over the land.

Minimizing the chance that such a nightmare would ever play out starts with a title search. Before the closing, an examiner from the title company combs through county or municipal records to uncover the property's entire history of prior ownership. The search may turn up unpaid taxes or other outstanding debts, plus current liens, court judgments, agreements that restrict the property's use and any other documents—collectively known as title exceptions—that could adversely affect the next owner. If the search report contains exceptions, the buyer's attorney typically invokes a clause in the sale contract that requires the seller to clear them up and get them removed from the public record before the closing. To make sure that debts get paid off and liens get settled, the seller might be required to put money in an escrow account that's controlled by the title company.

> Title insurance protects you from anyone who shows up out of the blue demanding money or even the right to use your property.

Like many of the laws, regulations and procedures intended to protect consumers, title work has a history of both criminal acts and bad record-keeping. Nineteenth-century real estate transactions were rife not only with impersonation, forgery, fraud and other shenanigans, says Mel Mitzner, a lawyer with the Commonwealth Land Title Insurance Company, but also with previously unknown creditors, unrecorded easement claims and restrictions on use, mistakes in recording, pending lawsuits over the repayment of loans, undisclosed or missing heirs and even the mental incapacity of the seller. Notable in this sorry history were Abe Lincoln's parents, who lost his birthplace—that famous log cabin—because of title irregularities. Today complications like these are infrequent, says Mitzner, but not unheard of. Unscrupulous sellers continue to sell properties to trusting buyers with forged deeds. Others refinance by forging the signature of a co-owner (often a spouse), then abscond with the proceeds.

When a problem does arise, insurers are required by law to defend the title, in court if need be, and take whatever legal action is necessary to prevent any loss to the owner. That includes paying legitimate claims up to the dollar amount stated by the policy, which typically equals the purchase price. Title insurance coverage is also being expanded, says Paul Hammann, senior underwriter at First American, to provide additional ownership protection (see "Coverage for a Rotten Deal"). And title insurance is cheap. The one-time premium, says First Title's Metzger, usually costs $3 to $5 dollars per $1,000 of coverage. Most states regulate policies and the premiums that title companies can charge, so there may be no need to shop for coverage or price. Usually paired with the basic coverage—at no extra cost—is another policy that insures the lender, enabling it to recoup money if a title dispute requires it to make a financial settlement.

As time passes, title insurance can also cover a house's increased value if the buyers purchase an inflation rider, which adds about 10 percent to the premium. Charles Wimer, northeast regional manager of Fidelity National Title Insurance Company, says that owners who lose their property because of a title deficiency can use the inflation rider to recover the house's full market value—as determined by an independent appraiser—not just the purchase price. Chances are that no problem will arise after the title search pronounces a property free and clear of any encumbrances. But it's good to know you can protect your investment from more than fire and flood and be reassured that your house won't become somebody else's business. ■

Coverage for a Rotten Deal

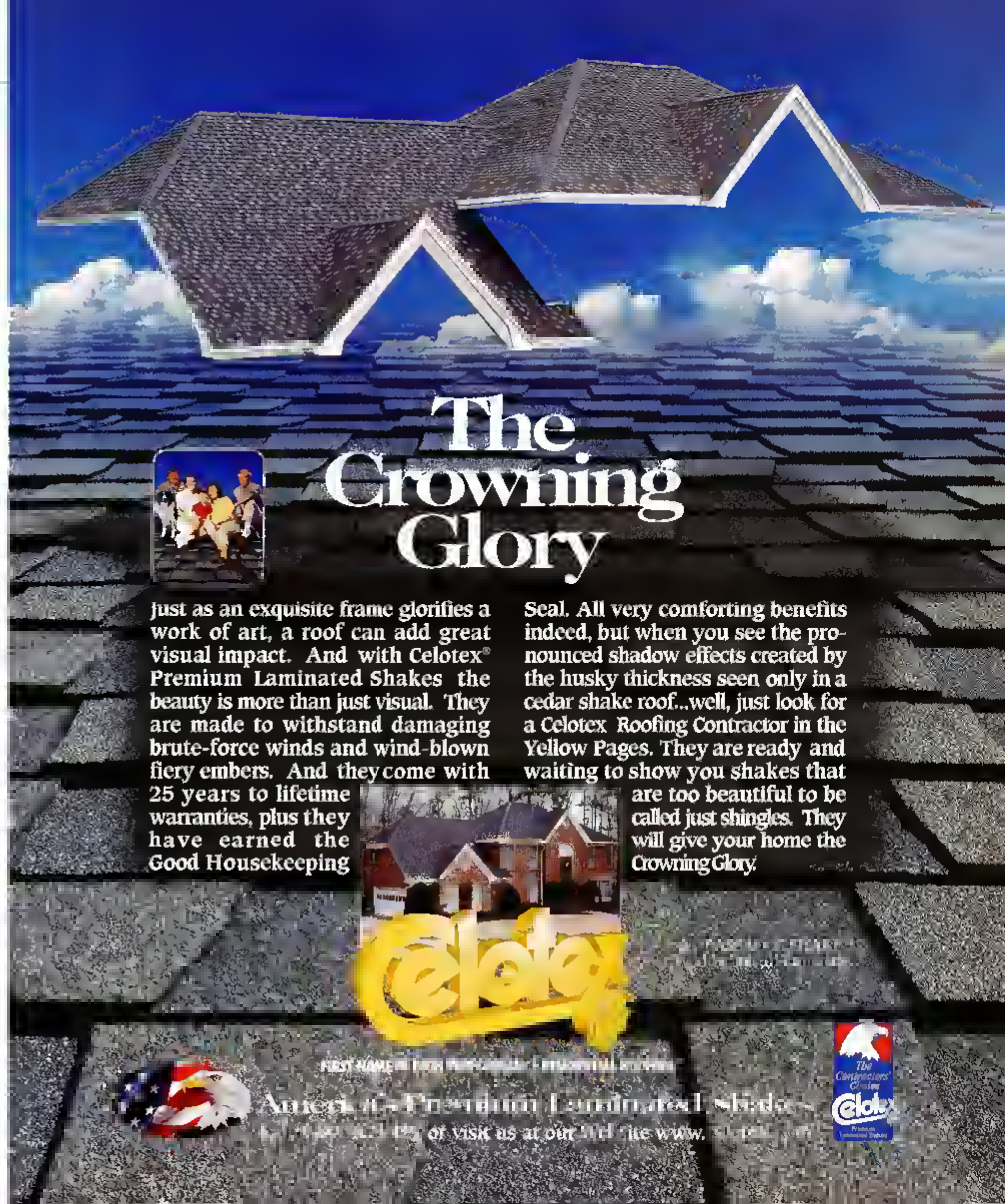
When Tim Cromwell bought a house in Santa Ana, California, he paid a little extra for expanded title insurance coverage and, in a very short time, he was glad he had. The day after the closing, Cromwell says, "I sent in my contractor to tear up some old flooring." The crew found that the plywood subfloor in a living room addition rested directly on dirt. "No concrete foundation or footings. It was like a backyard deck," Cromwell says. "And the wood was infested with termites." After contacting the city, Tim discovered the previous owner had built the addition without a permit. City building officials ordered Cromwell to tear out the room and rebuild it to code with, of course, a permit. He contacted his title company and learned that the expanded policy he'd purchased for an additional $120 covered building permit violations. In the end, he got $25,000 for the repairs he had to make.

While traditional title insurance policies protect owners from things that happened before the closing, expanded coverage—which, like an inflation rider, adds about 10 percent to the premium—pays for fixing problems that crop up later, including:

- **Correcting violations of a subdivision law in order to get a building permit for new work**
- **Removing structures built without a permit or in violation of zoning laws**
- **Taking down part of a house that crosses over onto a neighbor's land**
- **Paying for increases in real estate taxes—caused by a reassessment after a change of ownership—that weren't assessed before the policy took hold**

Check with the American Land Title Association (see Directory) to find out what kind of expanded coverage is available in your state.

(MANUFACTURERS · MATERIALS · PRODUCTS · RESOURCES — PAGE 101)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An Able Cable

More than a high-tech fad, fiber-optic lighting means the end of hard-to-change lightbulbs

BY CURTIS RIST

While shopping for interior lighting for the *This Old House* project in Watertown, Massachusetts, last fall, home owner Susan Denny found herself stumped when it came to how to illuminate the central stairway. An antique oak beauty, the staircase deserved to be bathed in flattering light, not to mention the fact that this route was now the only access to the second floor and would receive a lot of traffic. She worried that wall sconces might get knocked into as she and her husband, Christian Nolen, lugged furniture up and down. Recessed lights would solve that problem but create another: "To change a bulb, we'd have to set up a ladder on the stairs," says Denny, "and neither of us was crazy about that."

With their slender profiles, fiber optic lights can be squeezed into areas too tight for conventional recessed lights. Light travels through cable buried in the ceiling. The only parts visible are the end fittings, which can vary from an eyeball lens, top, to a fixed lens, middle, to an accent light for underneath cabinets, bottom.

Their solution came in the form of a thin filament of plastic. For the six ceiling lights, the couple chose ones that use fiber optic cables, the same cables that carry ultra-clear telephone and computer signals. Yet instead of carrying digital information, these cables transmit light from a single bulb located, in this case, in an attic closet where the bulb can be changed easily whenever it burns out. When a bulb is pointed directly at one end of the cable, composed of a solid core of acrylic in a black plastic jacket, the light reflects internally even if the cable makes a turn—acting like a tube of light. Then it emerges as a single beam of bright light at the other end. "Think of fiber optics as a light 'pump' pushing the light out from one bulb to as many cables as you want," says Doreen Le May Madden. A lighting designer at the Lighting Design Group in Allston, Massachusetts, Madden designed the lighting for the entire Watertown house.

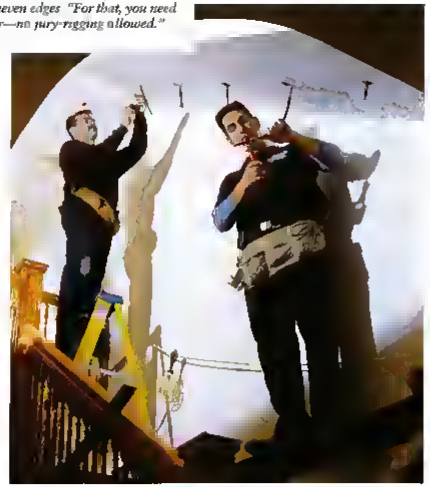
PHOTOGRAPH BY DAVID PRINCE

With fiber-optic lighting, one bulb can produce multiple lights. In a third floor closet at the T.O.H. project in Watertown, Massachusetts, Allen Gallant installed a fan-cooled box, left, fitted with a 100-watt bulb, then attached a bundle of six fiber-optic cables to the box. He snaked the cables into position above the staircase leading to the second floor being careful not to kink them. "That would keep the light from flowing through," he says. The cable ends need to be cut at a perfect 90 degree angle, below so that light flows straight out rather than being scattered—and lost—through uneven edges. "For that, you need a special cable cutter—no jury-rigging allowed."

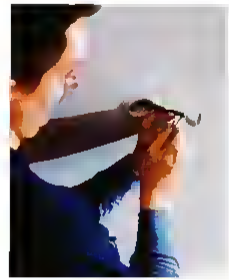
Beyond the techie appeal of fiber-optic lighting, there are some bright advantages to the system. The cables carry no electricity themselves, and they don't heat up. This has made them popular in museums, where artifacts can be damaged by the heat from incandescents. Stringing lights outdoors has always been troublesome because of the threat of electric shock in the rain, but these cables carry no such risk. The bulb can be mounted indoors, and the cables alone can wind their way to light gazebos, patios and gardens. "I'm using these cables underwater to light up a small pond for a client," says *This Old House* master electrician Allen Gallant. "That way, you'll never have to stand in a puddle to change a bulb—which is OK by me."

Fiber optic lighting in houses is brand new, so new that no one has any idea how fast the market is growing or how popular this innovation will eventually become. "We've just set up a group to study that," says Kyle Pitsor, a spokesman for the National Electrical Manufacturers Association in Rossyln, Virginia. Among other projects, the committee will work to set standards among the different manufacturers, who now make equipment that is by and large incompatible. New advances in technology have made it easier to bunch cables together and couple them to the main light box, or illuminator. "It's pretty easy to install," says Gallant and, because of this, experts foresee the day when an entire house will be lit using fiber optic cables. "It'd be such an energy saver because you'd be able to use so many fewer bulbs," says Madden. "These will be the lights of the 21st century."

Some glitches have yet to be worked out. Foremost, lights using fiber-optic cables are costly. The lighting box with the coupler for cables big enough to run six lights might run between $500 and $750. Then comes the cost of the cable. Cables made from thousands of strands of glass, rather than plastic, are easier to bend and carry light on longer runs than their acrylic partners. They also hold up longer, because the glass remains stable and will never discolor. But the cables do cost about $10 a foot—making them useful to highlight a few Rembrandts but hardly worth it for some overheads on a staircase. As an alternative, acrylic cables costing half as much are suggested for use at home—even though they may discolor over time, leading to a drop-off in the wattage they pump out at the other end. Glass cables need to be custom-cut so that they have a nice crisp edge that doesn't scatter the light, but their plastic cousins can be trimmed on the jobsite. Still, no ordinary wire cutter will do. They require a special pair of fiber-optic cable cutters that clip the ends at 90-degree angles. "If you mar the edges, you'll get less light flowing through the end," says Gallant. And while computer signals might bounce unimpeded through a cable, light gets weaker as it reflects its way along. Light traveling through a glass cable loses about 1 percent of its intensity over each foot traveled, even more when traveling through bends. But the acrylic cables lose about twice that. "If you go over 50 feet with a cable, then you start having noticeable light loss," says Madden.



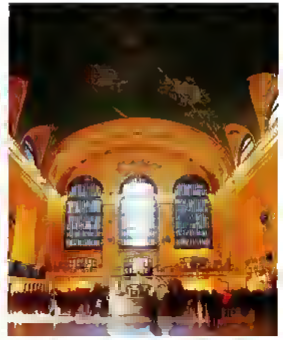
The biggest problem with the acrylic cables, unlike the glass ones, is that they might degrade. Heat can cause the plastic sheathing to oxidize and discolor the plastic within. Another problem is dust—of the sort that swirls around tornado-like during most renovations. Dust will not only dim the light transmission if particles work their way into the ends of fiber optic cables but will also cause deterioration of the plastic cables over time. "They attract a lot of dirt, sort of like a magnet," says Pitsor. He recommends installing the lighting systems "in as clean an environment as you can get." Finding a contractor who can do that might be difficult, he concedes. "I'd say about 80 percent of the electricians out there wouldn't know what to do with this," says Madden. As with anything else, never volunteer to be the guinea pig for your contractor. Instead, Madden suggests looking in the yellow pages for a theatrical lighting installer or supplier, who will be the most likely at this point to have experience with fiber optic cables.



Attaching the magnifying lens to the tip of the cable is the "simplest thing in the world," says Gallant. "It just screws on and pops into its recessed holder," above. When finished, the high-tech lights, left, cast a gentle glow over the vintage staircase at the Watertown house.

Working in a third-floor closet at the house in Watertown, Gallant installs a light box with a 100-watt halogen bulb. He then attaches a couplet with the six cables to be lit. "To avoid dust contamination, I work on a day when there isn't a lot of construction debris—no Sheetrocking or floor sanding," he says. The cables wind down through the wall studs and emerge in the ceiling of the stairwell. There, they are fitted with a magnifying glass lens that spreads the light over a greater area. When finished, the lights cast a subtle glow over the steps beneath, much softer than the light that ushers from a conventional recessed light.

A subtle glow, and convenience, too. "The fact that we don't have to worry about suspending ourselves over the stairway to change light bulbs is a good thing," says home owner Denny. ■



PHOTOS: KELLER & KELLER

PHOTO GRAND CENTRAL TERMINAL: MICHAEL MCLAUGHLIN

Fiber-Optic Twinkle

The dazzling constellation that adorns the ceiling of New York City's Grand Central Terminal, left, has a high-tech glitter to it nowadays. During a recent renovation, the illuminated ceiling was retrofitted with fiber-optic lighting. "The hardest part was getting the intensity of the stars right," says Richard Renfro, a lighting designer who conceived the project. The old constellation was lit by 72 10-watt bulbs. Now, seven fiber-optic illuminators house light bulbs, and each is connected to ten flexible cables that crisscross the ceiling. Each cable terminates in a star, but filters modulate each star's intensity. A hidden plug at the illuminators rest together on a catwalk that runs down the center of the ceiling's apex, so bulb changes are now as simple as a stroll. —Romy Pokorny

MANUFACTURERS · MATERIALS · RESOURCES · PAGE 101

Because plastic pink flamingos can't fly south for the winter.

Whatever's in your

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EXTRAS: LUSH LAWNS

BY ROMY POKORNY

Spray on the Green

The lawns at the Milton and Watertown project houses have a lot in common: Both are custom blends of several grasses, and both are the result of a lawn-care innovation known as hydroseeding. Two weeks after hydroseeder Bob Sparks sprayed the ground at Watertown with a chartreuse soup, healthy shoots covered the yard. Below ground, their roots were well established thanks to a protective pulpy layer left behind by the water-seed-fertilizer mix. The recipe for each lawn is a little different; home owners can choose from hundreds of seed types and combine them for a lawn perfectly suited to their needs. A family with kids, who might turn the yard into a soccer field, for example, can fortify the mixture with turf-type rye. A front yard that's mainly for show can get away with a rich-looking Kentucky bluegrass, saint augustine or bermuda grass. Best of all, the hydroseeding process takes only a couple of hours and is 70 percent less expensive than sod.

In just 15 minutes, the front yard at the Milton, Massachusetts, house is blanketed with a pulpy hydroseed mix, the start of a great lawn.

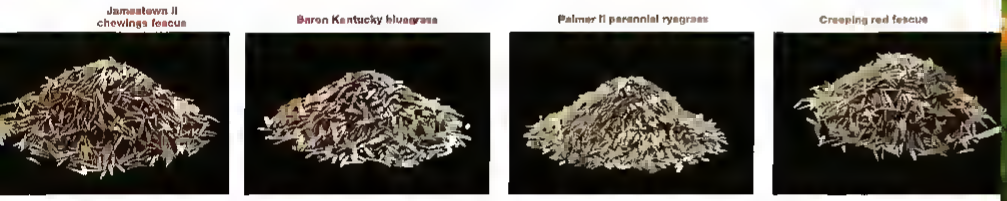
PHOTO: KELLER & KELLER

Is It Soup Yet?

To cover 15,000 square feet of yard with hydroseed, add 2,000 gallons of water, stir and spray

- 600 lbs virgin wood fiber
- 200 lbs seed
- 100 lbs. fertilizer
- 20 lbs hydro-tackifier, a natural gum that makes wood fiber stick to loam
- 10 lbs synthetic fiber, which bonds and elongates virgin wood fibers for easier spreading
- 5 gallons liquid lime
- 5 lbs. green vegetable dye

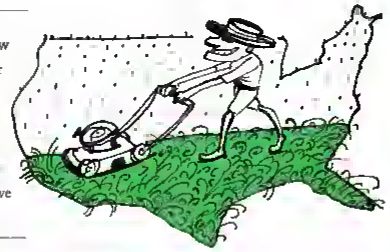
A Custom-Blended Brew

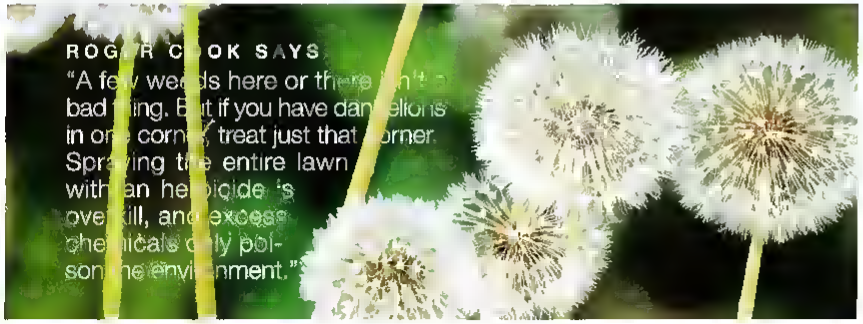


When Christian Nolen and Susan Denny bought their Watertown, Massachusetts, house, they wanted a backyard lawn that felt delicious to bare feet and yet could withstand turf-chewing sports activities. *This Old House* landscape contractor Roger Cook had to create a yard that could also thrive in the shade of the Norway maples along the property line. Hydroseeding was not only economical but also allowed Cook to use four seed species to achieve a lawn that scores: 40 percent turf-type perennial rye, 25 percent fescues for toughness and 35 percent Kentucky bluegrass for beauty. The blend also offers insurance—if a fungus attacks one grass type, the other two compensate.

The Best Grasses

Home owners are demanding ecologically sound, low maintenance lawns—meaning less fertilizer, pesticide, water and mowing. In general, the easiest grasses for northern states are hard fescue, sheep fescue and tall fescue, which stay green into the winter. In warm-winter climates of the South, bahia grass, zoysia grass and carpet grass thrive




ROGER COOK SAYS
"A few weeds here or there isn't a bad thing. But if you have dandelions in one corner, treat just that corner. Spraying the entire lawn with an herbicide is overkill, and excess chemicals only poison the environment."

PHOTOS: SEEDS, JOHN BUKE; ILLUSTRATIONS, J.M. MEADOWS/THE LLC; ILLUSTRATIONS, MARTIN MAYO

MANUFACTURERS' MATERIALS PRODUCTS RESOURCES PAGE 110

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LETTER From *This Old House*

CHEESE FACTOR IN PARADISE

The first time Norm and I walked up Duval Street in Key West, Florida, I began to have doubts. We started out getting mixed up with the tourists waiting to board the conch train, which is pulled by a jeep disguised as a locomotive. Later, we paused to consider stick-on-with-water tattoos, then headed to Sloppy Joe's, where an over-fleshed foursome was knocking back some hair of the dog rum and Cokes. When we saw a smoke shop selling "Monica" cigars, I realized Key West was a dreadful mistake.

My opinion changed during our second visit. Duval Street was still pure honky tonk, but our home owner Michael Miller, an architect and former Bostonian, began to introduce me to the real Key West. Strolling near his house, we turned down a private way and entered a landlocked garden. Waterfalls splashed into a turquoise pool. Ferns lined brick-and-coral pathways overarched by royal palms. In the center stood a beautiful cottage, a "conch house" similar to our winter project. Most conch houses were built in the 19th century by men who made their living from the sea, fishing, diving for sponges and salvaging cargo from wrecked vessels. Assembled by shipwrights, conch-house frames are built like ships, the mortise-and-tenon main beams pegged together with trunnels, and the interior walls are planked in wood. These houses also feature architectural elements from various North American ports of call: dormers and widow's walks from New England, wrought-iron railings from New Orleans, encircling porches from Charleston, South Carolina. The conch house in the garden was one that Michael had converted three years ago. The metal-shingled roof and wide, comfortable porch reminded me of New England, and the interior had been renovated to create a stunning vault-ceilinged library, plus bedroom, bathroom and kitchen. Key West, I realized, had dozens of these gems—both modest and fancy.

All aboard! Norm and I hitch a ride through Key West.

Key West buildings range from grand Queen Anne residences to shotgun houses built for cigar workers. Of course, great housing stock is one thing. It's another entirely for owners to have the desire, sensibility and money to maintain and renovate through hurricanes and scorching subtropical sun. Nothing endears a place to *TOH* more heartily than seeing whole neighborhoods restored. To find them in Key West, all you have to do is take a tack or two off Duval Street. Come to think of it, maybe we could get someone to produce a stick-on-with-water *This Old House* tattoo. —*Steve Thomas*

PHOTOGRAPH BY ANDREW KAUFMANN

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HOUSES IN THE

KEY OF LIFE

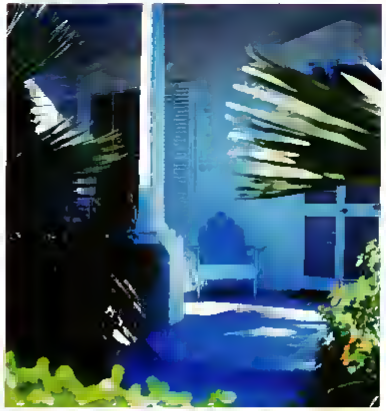


PHOTO: MARCAL BLANCON

Key West houses are known for their porches, an element that has architectural importance and fosters a sense of neighborliness

The conch house, in all its many forms, defines Key West style and makes a great setting for a cottage makeover by the *T.O.H.* crew

BY JACK McCLINTOCK

REMAKING A CONCH

It takes a good eye to turn a couple of old, pushed-together conch houses into a perfectly articulated modern dwelling without losing any of the original style, but architect Michael Miller and artist Helen Colley are doing just that on the Key West project house.

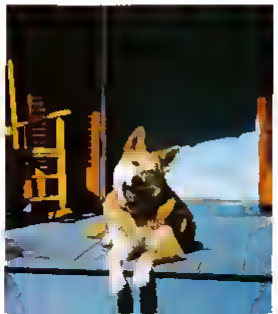
After a visit to Key West in 1867, Mark Twain described the town as "made altogether of one- and two story frame houses, some crazy, unpainted and with only thick board shutters for windows." Much of what Twain saw is still evident in the Old Town section of this 4-square-mile island. Beyond the glitz and vulgarity of Duval Street's T-shirt shops, music blasting open-air bars and plodding, sun-dazed shoppers, the most visible artifact of the 19th century—and a venerable icon of Key West life—is the conch house.

A conch (pronounced *konk*) is a large marine mollusk found locally, and the word has come to refer to anything native to the island. Conch houses exist in many sizes and shapes, from mansion to shotgun cottage, because they went up before anyone thought of zoning. They reflect the range of their origins, but they harmonize too. In their basic form they are modest, white clapboard houses, built off the ground on limestone piers, with tin-coated steel roofs, six-over-six double-hung windows and always, always a front porch. "Few houses in Key West are so small that they don't have a porch," says George Born, a preservationist with the Historic Florida Keys Foundation, based in Key West.

The conch house porch, and what it suggests about community, appeals to Michael Miller and Helen Colley, owners of *This Old House*'s winter project house on Fleming Street. A person on a porch is part of a real neighborhood, immersed in the give and take of community life—and in subtropical Key West, porches get used. The climate brings people outdoors. Friends stroll past at all hours in every season. And the houses are laid out for neighborliness—jammed together along 19th-century-narrow, bougainvillaea-inflamed streets, with the porch out front. "On Sunday morning we bring breakfast out with the paper and coffee," Miller says. "It's delightful. You recognize friends and talk or gesture to them as they pass by."

Key West vernacular architecture, so very much of its place and time, has also influenced modern town-planning across America. It inspired the New Urbanism architectural movement, which has, since the late 1980s, provided a theoretical foundation for scores of pedestrian-based, mixed-use and human-scaled traditional neighborhood developments from Portland, Oregon, to suburban Maryland. The first and perhaps best known is Seaside in the Florida Panhandle, where *The Truman Show* was filmed. Miami-based architect Andres Duany and his partner and wife, Elizabeth Plater

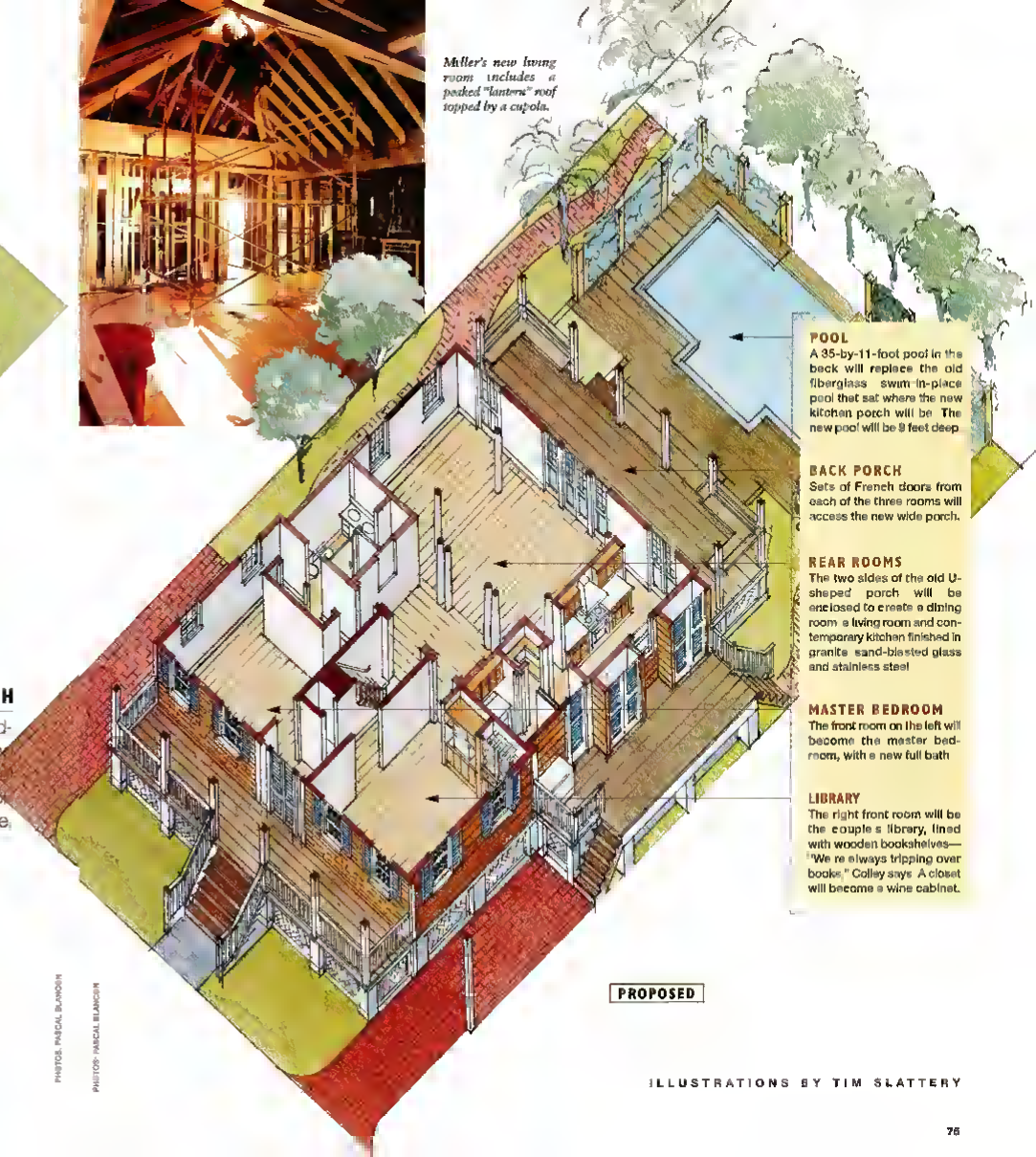
Norm Abram, Steve Thomas and project superintendent Tom Gilligan run down the latest house blueprints. RIGHT: Managua demonstrates why a front porch is essential in Key West.



PHOTOS: PASCAL BLANCHIER

EXISTING

Miller's new living room includes a peaked "lantern" roof topped by a cupola.



POOL
A 35-by-11-foot pool in the back will replace the old fiberglass swim-in-place pool that sat where the new kitchen porch will be. The new pool will be 9 feet deep.

BACK PORCH
Sets of French doors from each of the three rooms will access the new wide porch.

REAR ROOMS
The two sides of the old U-shaped porch will be enclosed to create a dining room, a living room and contemporary kitchen finished in granite, sand-blasted glass and stainless steel.

MASTER BEDROOM
The front room on the left will become the master bedroom, with a new full bath.

LIBRARY
The right front room will be the couple's library, lined with wooden bookshelves—"We're always tripping over books," Colley says. A closet will become a wine cabinet.

PROPOSED

ILLUSTRATIONS BY TIM SLATTERY

As a wedding present, undertaker Benjamin Baker had his staff build this two-story gingerbread house for his daughter in 1885. Liberated from the tedium of casket making, the workmen apparently spared no effort. Not a wall or window cracked when a tornado moved the house 7 feet from its foundation in 1972.

PHOTOS: NOLAN SMITH

Zyberk, now dean of the University of Miami school of architecture, drew up Seaside's town plan based on dimensions—distance of front porches to sidewalks, height of picket fences, widths of streets and so on—they took in Key West.

The original Key West inhabitants—known, naturally, as conchs—were conservative and few were rich. As a stroll around Old Town reveals, their houses descend from the simple Colonial cottages of the Bahamas and North American mainland. They're covered with the archetypal white painted clapboards but lack a prominent New England feature: the chimney, which nobody needed in Key West. Instead, the shipwrights who built many of the early conch houses added tropical features. Tin roofs, which replaced earlier shingled roofs, resisted fire, deflected the hot sun and efficiently channeled rainwater for cisterns under houses. Other low-tech cooling designs included louvered shutters and shady porches, ideas imported from the Bahamas. Traditionally, porch floors have been painted battleship gray to hide dirt and ceilings a serene sky blue, which repels wasps from building nests and evokes a refreshing, underwater feeling.

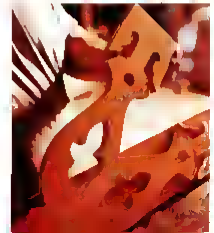
Hundreds of these simple, street facing houses were built in the late 19th century to house cigar factory workers. The small porch and three front bays are typical of the style, although the front door is usually off to one side.

Miller and Colley's house is typical. A ship's carpenter, Samuel Filer, built it from 1866 to 1868, using braced-frame construction, an intermediate development between post-and-beam and balloon-frame. For cross-ventilation, the original Miller house—a rear addition was added in the 1880s—is just two rooms deep. For security, the parlors and entry face the street. Dormers admit light into two upstairs bedrooms. They also admit heat, so the island's seagoing carpenters installed ship's hatches (called scuttles) in the roof. Propped open, these let the hot air escape, pulled shut—when the home owner remembers in time—they keep out the rain.

Ship's carpentry is apparent inside too. The walls are paneled horizontally in 1-by-3-inch, tongue-and-groove pine boards—just as a ship's hull might be laid up. Plaster was expensive, required skilled workmen, and would probably have cracked as the house flexed in high winds. Left unpainted or painted in glossy white enamel, these

THE GINGERBREAD MEN

Gingerbread drips from the eaves and porches of Key West's wooden houses in patterns as diverse as the personalities of the home owners themselves. Flying fish for the sportsmen, peace symbols for the no-nuker, pineapples for the hospitable, wine bottles for the oenophile. Whatever the design, gingerbread says to passersby: "This house is about life and fun!" The elaborate wooden scrollwork came to Key West with Queen Anne and Gothic Revivals during the island's late-19th-century cigar-making boom, and it stuck—even though delicate flanks of gingerbread have been vulnerable to Key West's occasionally tempestuous weather. Using an overarm pin router and jig, John Bringle (left) and his brother Steve make a living by not only matching damaged sections of gingerbread but also creating custom patterns that could look at home only in Key West. "People come in with all sorts of ideas," says John. "One of my favorites was a guy who had us do two marlins chasing a flying fish."—*Hope Reeves*



ABOVE: *Typical of Bahamian architecture, The Bahama House was dismantled on its native island and shipped to Key West just after Florida's great hurricane of 1846.* BELOW: *A porch roof shading second-story windows characterizes a quintessential "eyebrow" house. Known primarily for their cool upper levels, fewer than 100 were built in the late 19th century.*

board walls lend a nautical flavor to the interior, especially in the narrow shiplike hallways.

Many conch houses are simpler than Miller and Colley's. When cigar factories set up shop in the late 1880s, their owners built tiny, cheap houses for the workers: two or three rooms deep, sometimes with a hallway down the side. Their design may have come from Haiti. And the conchs produced two Key West originals. The conch sawtooth, in which successive rooms are lined up one behind another with their ridgelines parallel and valleys in between, giving the roof a sawtoothed appearance, and the conch eyebrow, a story-and-a-half house with the upper story windows peeping from under the porch roof.

As other styles swept America throughout the late 19th and early 20th centuries, fresh touches appeared in Key West too. Classical revival features (as in the simple square columns on the Miller-Colley house), picturesque Gothic revival scroll-sawn brackets and pierced bargeboards, Queen Anne gingerbread, and lacy wrought-iron balusters from Creole New Orleans. When an 1886 fire destroyed most of the commercial district, some conchs put up new houses that looked much like the old ones—but they replaced wooden shingles with fireproof metal and used balloon frame construction now that inexpensive metal nails and lighter, standardized lumber were available. After the railroad arrived in 1912 and Sears, Roebuck offered prefabricated bungalows for sale, conchs built some of them too. But the conch way was simple and dignified—and beneath the gingerbread and spreading eaves, that never changed. Over the years, waves of new owners renovated hundreds of these old houses, adding all manner of modern conveniences from central air conditioning to swimming pools. But the houses are still recognizably conch houses, and no matter what the new owners altered, they always kept the porch. ■

An elaborate example of a Conch house, this two story has been fully restored after years of neglect. In 1992, police found a man dead on the kitchen floor. He had expired about two months before, but his 75-year-old roommate thought he was just being "stubborn."

SPRINGING OUT OF WINTER

Nine months after breaking ground, the Dream House crew has toiled through a typical New England winter. "On the really bitter days, we didn't get a lot done," says builder-owner Walter Cromwell. "But the roof's on, we're dry, and that's always good." With the outside buttoned up, work moved inside, and every crewman was delighted when the heat was at long last turned on. Warmer weather isn't far off, but a finished house is still six or seven months away, and Cromwell admits to more than a little impatience. "The home owner in me wants everything done quickly," he says. "But my builder side knows a good house takes time."—*Hope Reeves*

PHOTO: KOLIN SMITH

Project Update

***Electrical*—400-amp service panel installed; all wiring for switches, outlets, lights, cable television and phones roughed in.**

***Mechanical*—Boiler, air handlers and ductwork installed for forced-air heating and central air-conditioning.**

***Plumbing*—All supply and drain lines roughed in; bathtubs installed first so that tile work can proceed.**

***Interior framing*—All partitions complete; front and back stairways installed.**

***Coming soon*—Insulation, drywall, hardwood floors, interior doors, trim, built-ins.**

NEXT ISSUE: LANDSCAPE PLAN

From [illegible] pillared drive-way entrance to a private backyard patio, the Dream House grounds will rise from muddy mess to 2 acres of beautifully planted slopes and terraces. The plan developed by landscape architects Dawn Handler and John Geiger contains ideas that can enhance most any yard and in the May issue, you'll see the wonders they've worked with trees, shrubs and perennials.

TOP JOB

A roof of red cedar, expertly installed, gives the Dream House a handsome, durable crown

By Brad Lemley

As Walter Cromwell cranes his neck to survey the scene, a slight smile breaks across his face. On the steep roof pitches of his house-to-be, a half dozen carpenters are strayed here and there, some scurrying gingerly along ridges and staging, others hunkered down with chuffing pneumatic nailers. The unmistakable aroma of cedar sweetens the air, and Cromwell likes what he sees: steady progress toward what will be a thoroughly handsome roof. Among the hundreds of decisions he's made during the construction of *T.O.H.*'s Wilton, Connecticut, Dream House, the one that led to this tableau was easy: choosing red cedar roofing and siding shingles. "After all," he says with a shrug, "it's a Shingle Style house."

True enough, cedar shingles have been the sine qua non of this playful architectural genre since it first appeared in the 1880s. Choosing a different material would have been tantamount to slapping a beanie on a beefeater.

Cedar's appeal stems in part from its close connection to America's architectural traditions. "Up until the turn of the century, when asphalt and metal became widely available, wood shingles were the norm, at least in the northern states," says architectural conservator Andrea Gilmore. The earliest wood shingles were made of oak, pine and redwood as well as cedar but, by the turn of the century, cedar had captured most of the wood-roof market. Today, cedar still dominates, not only because of its formidable rot resistance but also due to its surpassing beauty.

As the completed pitches at the Dream House so amply demonstrate, cedar's good looks can't be replicated by any other material. Warm-toned and subtly textured, each shingle is ever so slightly different from the ones next to it, and in a year or two they'll all weather from reddish browns to silver grays. On any house that makes a show of its roof design—be it traditional or contemporary—cedar shingles heighten the drama.

Choosing cedar's beauty, however, also means paying top dollar for a roof. The material alone costs three times as much as the best quality asphalt shingles, and the skill and time required to install cedar—one 5- to 12-inch wide shingle at a time—increases the cost gap even more. A finished cedar roof can cost up to $34 a square foot, compared to $10 for asphalt.

"It would take six or seven guys two to three weeks to finish this, if we did it full-time," says carpenter Ray Chizmar, straddling a ridge and waving a calloused hand over the 7,000-square-foot Dream House roof. "With asphalt, we'd do it in four days. Asphalt is mindless. You just align the strips and go. Cedar takes some fiddling." And well it should because only with careful installation—and regular maintenance later on—will the investment in cedar pay off with a roof that's long lived and trouble-free.

At the moment, Chizmar is fiddling in earnest, flipping through a stack of shingles to find one wide enough to go above a rank of narrower ones. "It's best if you stagger the joints between three rows," he says. In other words, a straight-edge aligned with a joint should miss joints on the two rows, called

PRESERVATION PLAN

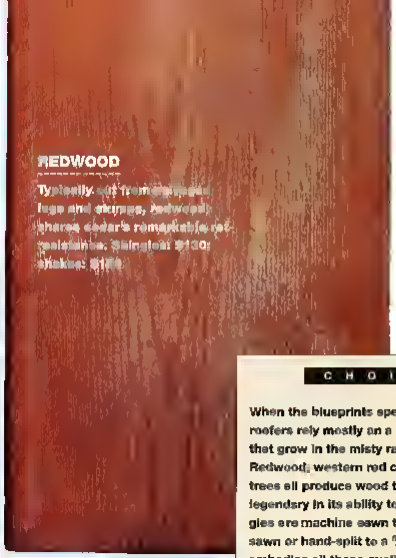
"I've been on cedar roofs that were 70 years old but looked like they were installed yesterday," says roofer Greg Blake. "And I've been on roofs just 7 years old that looked 70." Blake, the owner of Cedar Restoration Inc. in Birmingham, Michigan, knows what kills a wood roof: too much sun, which slowly breaks down fiber, and debris, which traps water and fosters decay. With regular maintenance, Blake says, a properly installed wood roof with top-quality shingles should last 40 to 50 years. Here's his two-step preservation plan.

Keep it clean. Sweep off matted leaves, pine needles and other detritus every year. Prune or thin overhanging branches to help minimize moss and algae growth. If either moss or algae already have a foothold, scrub the shingles clean with a dilute mixture of water and swimming-pool chlorine. Blake recommends against pressure washing, which weakens the wood.

Feed it oil. After the roof has weathered for five to seven years, Blake recommends spraying it with an oil-based clear wood finish, with follow-up treatments every five to seven years—more frequently if the roof gets a lot of direct sunlight. The finish fortifies the wood, although it won't preserve the russet hue of new cedar—nothing will. Blake warns that spraying turns roofs slick as ice, leave this job to a roofing or painting pro.—*Mark Feirer*

PHOTO: ROLIN SMITH

Warmed by the afternoon sun bouncing off the south roof, Lulz Mohammed tacks down the high-tech drainage mesh (1) that helps shingles dry out after wet weather. Between the shingles (2) and the sheathing (3), the recipe for a proper installation includes four key ingredients: a waterproof membrane (4), roofer's felt (5), copper flashing (6), and the mesh.



REDWOOD

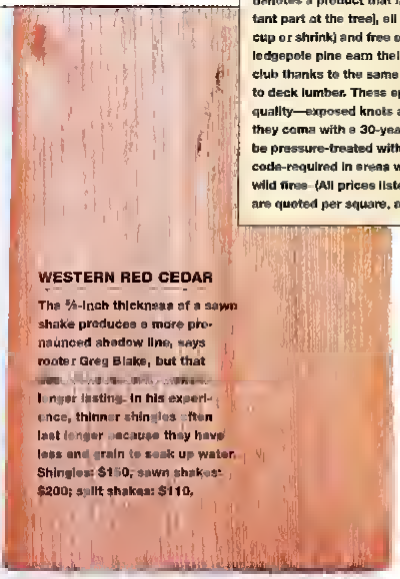
Typically cut from [illegible] logs and shorter, redwood shares cedar's remarkable rot resistance. Shingles: $130; shakes: $170

ALASKAN YELLOW CEDAR

Slightly denser than western red, this cedar should have a slightly longer life, according to wood consultant Jan Arne. When it weathers, yellow cedar stays a shade lighter than other species. Sawn shakes: $240

CHOICE CUTS

When the blueprints specify wood shingles or shakes, roofers rely mostly on a small fraternity of giant conifers that grow in the misty rain forests of the Pacific Northwest. Redwood, western red cedar and Alaskan yellow cedar trees all produce wood that is clear, straight-grained and legendary in its ability to resist rot. For both types—shingles are machine sawn to a ⅜-inch thickness; shakes are sawn or hand-split to a ⅝-inch thickness—only one grade embodies all those qualities: Number 1 Blue Label. It denotes a product that is all heartwood (the most rot-resistant part of the tree), all vertical grain (the cut least likely to cup or shrink) and free of rot-prone knots. Spruce and ledgepole pine earn their membership in this exclusive club thanks to the same kind of chemical treatments given to deck lumber. These species generally lack Blue Label quality—exposed knots and flat grain are acceptable—yet they come with a 30-year warranty. Wood shingles can also be pressure-treated with fire retardants, which may be code-required in areas with a regular threat of forest or wild fires. (All prices listed below are for the best grade and are quoted per square, or 100 square feet of finished roof.)



WESTERN RED CEDAR

The ⅝-inch thickness of a sawn shake produces a more pronounced shadow line, says roofer Greg Blake, but that [illegible] longer lasting. In his experience, thinner shingles often last longer because they have less end grain to soak up water. Shingles: $150; sawn shakes: $200; split shakes: $110.

PRESSURE-TREATED PINE OR SPRUCE

A lower-cost alternative to red wood and cedar, pressure-treated pine and spruce get their reddish hue from a stain applied when the shakes are soaked with the preservative. Sawn shakes: $100.

courses, by at least an inch. Finding a 10-inch-wide shingle, Chizmar tests, then triumphantly slaps it into place, promptly pinning it with nails as if to prevent its escape. Proper exposure is equally critical. At the Dream House, each 18-inch-long shingle shows just 5½ inches. "That way, every square inch of the roof has triple coverage," says Chizmar.

Special measures are also required to keep the shingles from trapping water, which even in cedar can promote rot. "Nailing cedar shingles directly to plywood sheathing is the biggest mistake you can make," says *T.O.H.* contractor Tom Silva. "I've seen roofs installed that way. They start to go bad right away and need replacing in 10 years."

Traditionally, shingles were—and sometimes still are—installed on skip sheathing boards, usually 1x4s or 1x6s, nailed at 1- to 2-inch intervals across the rafters. The gaps between the boards help wet shingles dry out. But without a solid skin of plywood topped by roofing felt, aka tar paper, any leaks in the shingles instantly dribble into the house. So the modern alternative—and the one being used at the Dream House—is to sheathe with plywood, cover it with 30-pound felt and then tack down sheets of a special drainage mesh. Widely known by its brand name, Cedar Breather, the mesh resembles the open-weave plastic used to scrub nonstick cookware. Though just ¼ inch thick and seemingly insubstantial, it mightily resists compression: A 200-pound man can't flatten it. But does it work? "I've had good luck with it," says Tom. "Since I started using it five years ago, I've kept track of those projects, and I have yet to see any signs of premature aging."

NORM'S NEW ROOF

"I have red cedar shingles on my own house," says T.O.H. master carpenter Norm Abram of the Colonial he built near Boston. "I just love the look. Lots of asphalt shingles try to mimic wood. None succeed."

Regardless of the roofing being used, the eaves, valleys and ridges always need special protection. At the Dream House, a 3-foot-wide waterproof membrane protects eaves and takes from leaks caused by ice dams and wind-driven water. Wide sheets of 20-gauge copper flashing line the valleys, while short bent pieces of copper, called step flashing, interleave between shingles wherever one of the 15 dormers meets the roof. Narrow copper strips, called drip edges, keep water away from fascia trim.

Ridges are one of the trickiest details, says Tom. "It's best to use a ridge vent, not a gable vent. But a cedar cap on top of a ridge vent can fail, so I like to put on a copper cap instead. Then you can cover it with cedar boards, but I think the exposed copper on top of the cedar looks great."

After the felt, mesh, membrane and flashing are in place, each shingle is secured with two nails or staples placed about 1 inch from the sides and roughly 2 inches above the line, called the butt line, that will be formed by the next higher course. Nails should be aluminum or galvanized or stainless steel, ring-shanked and long enough to penetrate the sheathing by at least ¾ inch. The Dream House crew uses galvanized 6d ring shanks, which are 1½ inches long. If staples are used, they should be stainless steel or otherwise corrosion resistant. Each fastener should be driven flush but not so vigorously that it crushes the wood. "You want the shingle to be able to move a little," says Tom. "Otherwise it can split."

As the ruddy rows of shingles spread across his roof, Cromwell sets aside practical considerations for the moment and just admires the view. "This house has a kind of romantic, by-the-seashore feel to it, and I think the cedar fits right in with that," he says. "But good as it looks now, in a year it will be grayed out and really beautiful. Most other roofing materials just break down over time. With cedar, the older it gets, the better it looks." ■

PHOTOS: DAVID PRINCE. ILLUSTRATIONS: JONES NEMEC

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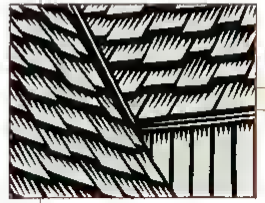
ROOF DECOR

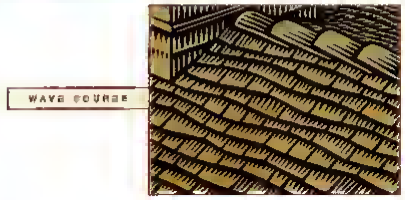
With military precision, wood shingles will march across the roof of *T.O.H.*'s Dream House in unerringly straight, perfectly horizontal rows. But that's not the only way to nail down a thin slice of cedar. On both the walls and roofs of many a traditional-style house, shingles have long been arranged in eye-catching patterns that bend straight lines into waves and zigzags and float diamonds and semicircles in a sea of rectangles, all without compromising their ability to shed water. Here are just a few of the possibilities.



OFFSET BUTT

DIAMOND INSET

FANCY CUTS



WAVE COURSE

meadow Lark

A FIELD IS A LOVELY ALTERNATIVE TO A LAWN

BY CURTIS RIST PHOTOGRAPHS BY ANDREW KAUFMAN

People measure the passing seasons in poetic ways, some by marking the arrival of warblers in spring, others by tasting the first succulent orchard apple in the fall. Growing up in the suburbs of New Jersey, I calculated time more tediously, by the procession of lawn chores. First came the application of lime and fertilizer. That was spring. Then came the sweaty drudgery of mowing, which I knew to be summer. Fall weekends virtually disappeared in a frenzy of leaf raking, relieved only by fallow winter. I vowed rather loudly over dinner one night, at age 10, to never foist these ridiculous tasks on my own children. "What are you going to have for a yard then," my father scoffed, "a field?"

Actually, yes. When picking a site to build a house in New York's Hudson River Valley a few years ago, I found myself drawn to an old cow pasture at the top of a hill. A grove of large oak and maple trees flanked an 8-acre meadow—or, rather, a meadow-to-be. In reality, the pasture had grown into impenetrable thickets of poison ivy, thorny brambles and bushy gray-stemmed dogwood that reached over my head. "This looks a

Around the author's house in Churchtown, New York, the scrubby overgrowth that had invaded an old cow pasture has been hacked down and turned into a meadow filled with native grasses and flowers.

little wild," my wife, Lynn, said skeptically as she untangled herself from a vine. "Are you sure we can do something with this?"

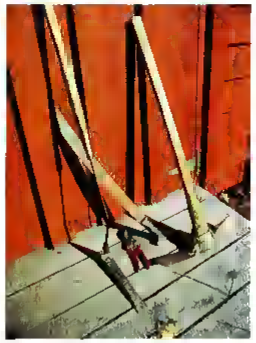
No, but I was certainly motivated to try. As far as I'm concerned, lawns are sterile second cousins to Astroturf, except that they depend on fertilizers, pesticides, and unceasing human care. "They're biological deserts," says Jeffrey Glassberg, the president of the North American Butterfly Association. "A lawn is this unreal, fake place that really doesn't support much life." By contrast, a meadow is buzzing with birds and insects and swirling with a rich variety of plant life. Natural fields need no chemicals—their innate diversity resists pests—and they never require taking or watering. "If there were an Eden," says Glassberg, "it would be a meadow."

Why are lawns so sterile and meadows so fecund? The answer lies underground, with the roots. Cool-season grasses, the kind covering most lawns, have roots that spread in a thick fibrous mat, squeezing out most other plants. Meadow grasses, by nature, are less authoritarian. In the Northeast, for instance, the native grasses such as little bluestem grow in compact clumps, leaving space for a colorful profusion of wildflowers, including lupines and black-eyed Susans. The caterpillars that thrive on the flowers' leaves become the butterflies that soak up the blossoms' nectar. Birds, from the elusive bluebird to the swooping goldfinch, dine on a smorgasbord of insects and seeds. Glassberg says, "Meadows are ecological picnics."

You don't need a giant space for a meadow, a 10-by-10-foot corner of a suburban yard that receives at least four hours of sun a day will do just fine. But getting a meadow to take root requires some hard work. Unlike the natural grasslands of prairies or mountains, meadows in the Northeast are ephemeral. They appear suddenly whenever fire or windstorms clear a forest opening big enough for the sun-loving grasses and wildflowers to take hold, and then slowly disappear as the forest reclaims its turf. Creating a meadow, in effect, requires taking nature back to the first stage of succession.

It's not enough just to clear the scrub in an old field or to sprinkle a can of wildflower seeds over a lawn. Landscape designer Larry Weaner, a noted authority on natural meadows, says, "You need to literally root out the woody plants or they'll grow right back up." And if you have a lawn, the grass has to go too. "It will smother everything," says Weaner. He recommends killing it with a short-lived, broad spectrum herbicide and leaving the grasses' dead roots to nour-

Power tools make clearing an old field easy. TOP. *A 14-horsepower brush mower glides through a dense thicket, and turns the brush to mulch. Although self-propelled, the machine is heavy. "It's easier to make long, straight runs rather than a lot of quick turns," says Ousbon Bateman, a landscape designer.* CENTER. *To remove larger trees, he uses a chain saw with a short 14- or 16-inch bar. "These saws are lighter, and you can keep them out of the dirt when you're cutting close to the ground."* BOTTOM. *His favorite power tool is the rotary trimmer fitted with a blade that looks like a circular saw. "It's maneuverable and portable and has great control," says Bateman, who always wears protective goggles, earmuffs and headgear as well as cut-resistant chaps when he's working with power tools.*



Swinging in the Scrub

Although slower than their high-powered relatives, quiet hand tools have a natural place in the field. A weed whip, left, is held like a golf club to tee off against weeds and vines. Says Bateman, "Just pace yourself so you don't burn out." Thicker-stemmed opponents require a machete, center. The grub hoe, right, rips out stumps. Pruning clippers, bottom, trim the pesky branches that get in the way when it's time to pull out the chain saw.

Bateman roots out a tenacious grey-stemmed dogwood stump with a sharpened grub hoe. "It doesn't hurt your back if you swing with the motion," he says.

ish the soil. Simply letting a lawn grow shaggy accomplishes nothing other than to provoke the wrath of neighbors.

For those averse to poisoning plants, burning is an option, but Weaner doesn't recommend lighting fires near a house, for obvious reasons. So when faced with a phalanx of scrub, meadow makers haul out the heavy artillery—brush mowers, chain saws and rotary trimmers—to shear the woody invaders off at the knees. Once cut, the field can be double-tilled with a cultivator (although Weaner warns this encourages weeds) or it can be covered with wide rolls of black plastic and left to bake in the summer sun. The heat buildup underneath the plastic kills just about everything in a few weeks—no herbicides required. Weaner rakes the cleared area, then sows it with native grass seed, available through catalogs. In his view, planting only wildflowers is a bad idea. "The mixture should have at least 40 percent grass to hold off the weeds," he says. "Otherwise, it will end up looking like an untended garden."

With our acreage and ambitions, my wife and I decided to forgo chemicals and black plastic and instead kill the scrub slowly, by repeatedly whacking off the shoots that spring up from the stumps. My weapon of choice: a giant 14-horsepower brush mower that levels the most tenacious stands of gray dogwood. Unlike an ordinary lawn mower, this machine has a ¼-inch-thick, 3-foot-long steel blade that will chop up anything that the front catcher can knock down. The mower is designed to cut stems up to an inch thick, but occasionally I run it over a 2-inch cherry sapling or cedar bush. It takes longer to digest, but the machine doesn't stall. For bigger trees, my wife and I wield his-and-her chain saws—which we gave to each other one Christmas. So far, we've cleared about 3 acres in three years with help from Ousbon Bateman, a landscape designer in nearby Rhinebeck, New York.

Maintaining our new clearings is blissfully simple: We cut them once a year with the brush mower set at about 6 inches high. This is a project for very early spring, which allows the birds to feast on the seeds all winter and nest undisturbed through the summer. Our meadow might be evolving a little slower than one smothered with plastic or chewed up with cultivators, but the grasses sprout up quickly enough to suit us.

Now, instead of the velvet green of a lawn or impenetrable thickets, the fields around our house spring to life with ever-changing hues—from the lavender of the thistle to the starry white of the wood aster just before the frost. Even in the snow, the stalks of little bluestem point skyward, a golden promise of the spring to come. I don't involve my children much in this meadow mania, but my eldest son, now 10, is developing his own turf preferences. While tunning football scrimmages in the yard last fall, he tripped over a clump of little bluestem. "You know what I'm going to have around my house when I grow up?" he shouted. "A lawn!" ■

Unlike lawns, meadows explode with a surprising variety of plants—such as this stand of goldenrod pressed against a border of red maples—and attract a menagerie of animal life. "Meadows are hugely valuable as an ecosystem," says Bateman. "And they look great."

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LETTER FROM A

COUNTRY HOUSE

BY VERLYN KLINKENBORG PHOTOGRAPHS BY LINDY SMITH

SPRING

YESTERDAY, AN ENORMOUS TRUCK PULLED UP AT THE FOOT OF THE HILL ALONG THE HIGHWAY'S EDGE BELOW THE OLD HOUSE MY WIFE, LINDY, AND I ARE RESTORING. ON THE FLATBED SAT AN EXCAVATOR, A SLIGHTLY SCALED DOWN, STEAMLESS VERSION OF A MACHINE I WOULD HAVE CALLED A STEAM SHOVEL WHEN I WAS A LITTLE BOY. IT HAD COME TO DISMANTLE THE TANGLE OF FENCES—PAGE WIRE, BARBED WIRE AND PRESSURE-TREATED LUMBER—ERECTED BY OUR FARM'S PREVIOUS OWNERS, WHO RAISED CATTLE, PYGMY GOATS, POTBELLIED PIGS, SHEEP, CHICKENS, PHEASANTS AND PEACOCKS. HE ALSO RAISED BISON THAT WERE FAMOUS LOCAL LANDMARKS. EVERYONE WE'VE MET SINCE WE BOUGHT THIS PLACE REMEMBERS THEM. IN THE WEST, ONE WAY TO FENCE BISON IS TO GIVE THEM PLENTY OF ROOM IN WHICH TO PRETEND THERE ARE NO FENCES AND THEN TO SURROUND THAT QUANTITY OF EMPTINESS WITH A STOUT DOUBLE BARRICADE OF ELECTRIFIED WIRE. HERE IN CANAAN, NEW YORK, THE PLAN HAD APPARENTLY BEEN TO DAZZLE THE BISON WITH A COMPLICATION OF ALLEYS, A LABYRINTH FROM WHICH THE BEFUDDLED ANIMALS COULDN'T EVEN IMAGINE FREEING THEMSELVES. IT MAY HAVE WORKED FOR BISON, BUT IT'S USELESS FOR OUR FOUR HORSES, WHO ARE BETTER LOGICIANS AND MORE WORRIED BY WIRE.

OPPOSITE. Verlyn Klinkenborg leads his quarter horse Ida to the barn on his property in upstate New York. She'll stay there while excavators pull out the tangle of fencing that had been left in her usual pasture by the previous owners. THIS PAGE. Brenda Harvey saws up standing-dead trees in the barnyard. The excavator takes care of stray boulders.

THE FUN OF HIRING A CREW WITH AN EXCAVATOR IS, OF COURSE, WATCHING THE WORK. THERE WAS A DROP FROM THE FLATBED INTO A SHALLOW HIGHWAY DITCH AND THEN AN IMMEDIATE RISE CREATING, I THOUGHT, AN AWKWARD DISMOUNT FOR THE EXCAVATOR. BUT THE DRIVER, TONY KING, TURNED THE MACHINE 90 DEGREES, BRACED THE CLAW KNUCKLE DOWN AGAINST THE HILLSIDE AND HELD THE NOSE OF THE EXCAVATOR ALOFT AS HE EDGED IT OFF THE FLATBED. ONCE THE FRONT END TOUCHED DOWN—EVER SO GENTLY—HE PIVOTED THE CAB UNTIL THE CLAW RESTED ON THE FLATBED. THEN HE EASED THE MACHINE ONTO THE EARTH, MOTORED UP THE HILL, PLUCKED A HEAVILY MANACLED GATE FROM ITS HINGE PINS AND BROUGHT THE BEAST TO REST, LIKE A BENEVOLENT TYRANNOSAURUS. "HE COULD COMB YOUR HAIR WITH THAT THING," SAYS KING'S EMPLOYER,

Billy Kie, who lives just east of here.

This balance between delicacy and power is exactly what I've been studying as spring arrives. Using the frozen globe beneath for leverage, the snowdrops and aconite have somehow driven a few green spears through the sod and snow. These early flowers have taught me a new respect for what you might call the sharp edge of cellular division. Wisteria tendrils have tugged the abandoned swing sideways, almost flirtatiously. A burrowing beast has undermined one end of the terrace, causing the steps to heave sideways like a stone ship going down in a sea of rock.

I, meanwhile, stand in the third story and, with a short length of 2x6 and a hammer, try to open some sliding windows. It's a dilemma. How much power to apply? How much delicacy to exercise? I lay the 2x6 against the vertical jamb and tap—harder, a little harder, harder still, until one of the windows opens. The other won't budge, and I can't tell where the line lies between sufficient force and breakage. That window I will leave to Bill Autrey, a local cabinetmaker, carpenter and contractor. One of the craftsman's peculiar virtues is to know how to balance delicacy and power, to know when a sharp tap will get the job done—and when it won't. The mark of my amateur standing is the hesitation I feel when a sharp rap is required, especially since sharp raps seem to be called for so often. And undeniably, if I go too far and actually break the window, it would be much harder for me to fix it than for Autrey, if he broke it. *Let him do the breaking to whom the fixing comes easily.*

I grew up in a family that was always building—laying sidewalk, converting a garage to a bedroom, turning a hallway into a library, replacing sewer pipe. I learned a lot from my relentlessly practical dad, the very definition of a do it yourselfer. I learned how to tell the difference between a job I can handle and one I should hire out, and I accepted the fact that there are only two reasons for doing a bit of building or repair myself. One: to get it done right. Two: for personal satisfaction. Saving money is never part of the equation, because it's nearly always cheaper to hire someone and stick to the things I get paid for. Some days, I feel remarkably competent and venture out, tool box in hand. Other days, the only jobs I feel I can do well are to turn the compost heap and to watch the real craftsmen at work.

With Tony King at the wheel, the excavator does a mammoth portion of the work, but King couldn't get the job done without the help of crew members, from left, Billy Kie, Gary Finney, Dion Hall, Brenda Harvey and Jake Wolters.

We've had a lot to watch. When we bought this house, it had a hot tub room paneled in heavily varnished cedar. There were dead mice steeping in a puddle at the bottom of the tub, and the tub's controls no longer worked. The room felt a bit '60s stewardess in a house that was more maidenly than that. So Autrey turned the space into a darkroom for Lindy. One day, I came home, and—where a large, square fiberglass tub used to be—the floor now had a gaping hole leaking the smell of old wet stone and offering a strange glimpse into our cellar. Over the next few weeks, a darkroom appeared. Autrey worked patiently and with a distinct absence, I couldn't help noticing, of sharp taps.

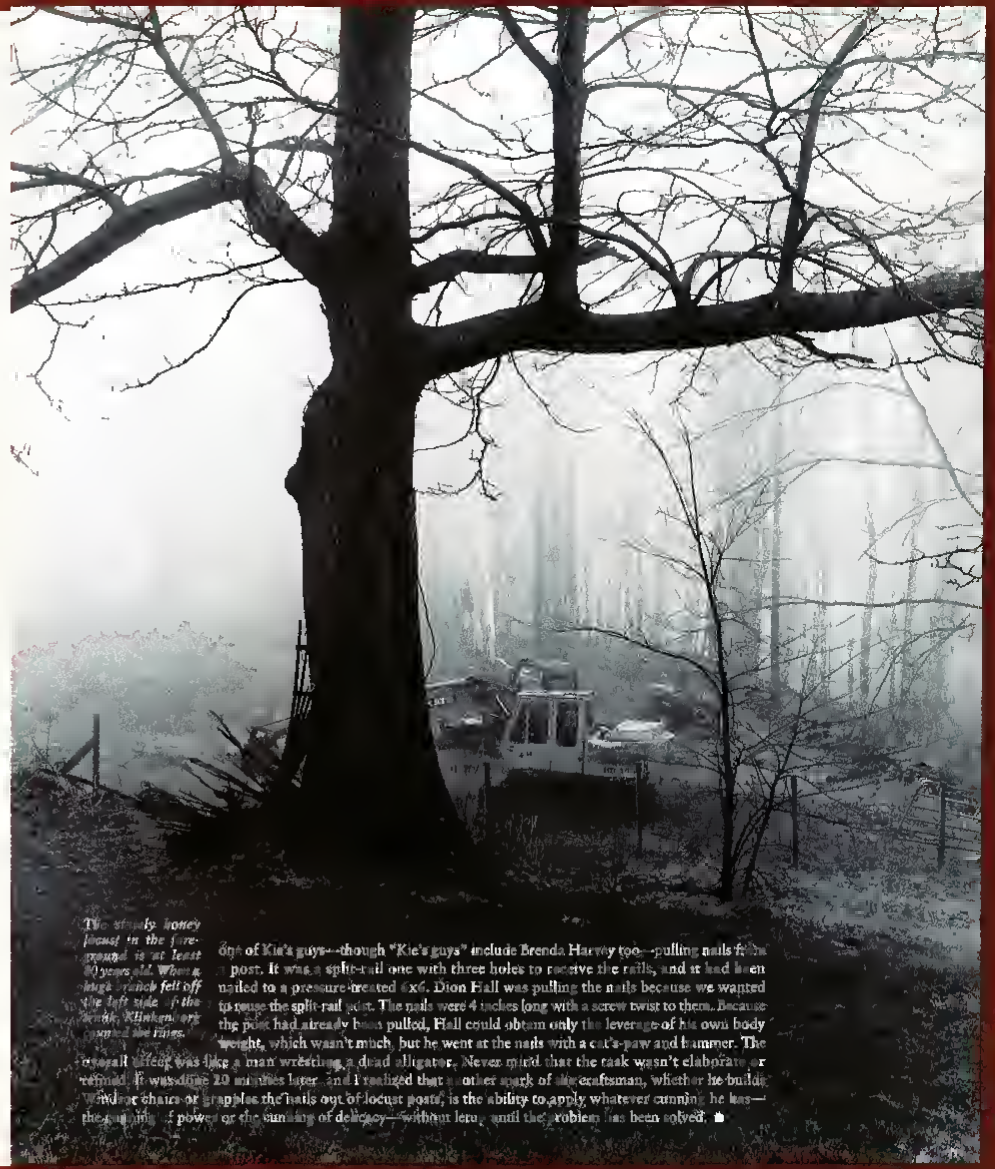
I dropped in on him occasionally, but it was hard to watch. In the confined space, I felt I was disturbing him, reading over his shoulder so to speak. That hasn't been true with King and the excavator. When he starts it up in the morning, I walk outdoors, and hours sometimes pass before I return. At first, I pretended to be busy chopping burdock out of the fence or exploring the consistency of the soil with the toe of my boot. But finally I gave up and sat on a warm rock in the sun and watched the excavator bring about the demise of that wretched fence. King offered me the chance to drive, but—as I say—I know the difference between a job I should do and one I shouldn't.

I laughed the first time I watched King pull a fence post. As easily as you would extract a sliver from the meat of your hand, the excavator's hydraulic thumb lowered to meet the claws on the bucket, squeezing the top of the post and pulling the timber, which had been driven 3 feet into the earth. I laughed at the ease of the way King's slight motions in the cab replaced all the grunting and heaving and cursing it would have cost me to remove that post myself. As it was, the rest of Billy Kie's crew was busy grunting and heaving and cursing because what the previous owner had lacked in common sense he'd more than made up for in nails and staples, which workers were removing one by one from posts and trees.

The weather-beaten stone terrace at the south side of the house needs squaring up. Then a new perennial garden will go in below.

Sadly, there is no machine for that task.

A couple of days ago, I watched Kie's guys—though "Kie's guys" include Brenda Harvey too—pulling nails from a post. It was a split-rail one with three holes to receive the rails, and it had been nailed to a pressure-treated 4x6. Dion Hall was pulling the nails because we wanted to reuse the split-rail post. The nails were 4 inches long with a screw twist to them. Because the post had already been pulled, Hall could obtain only the leverage of his own body weight, which wasn't much, but he went at the nails with a cat's-paw and hammer. The overall effect was like a man wrestling a dead alligator. Never mind that the task wasn't elaborate or refined. It was fine 20 minutes later, and I realized that another mark of the craftsman, whether he builds a chair or grapples the nails out of locust posts, is the ability to apply whatever cunning he has—the sparing use of power or the cunning of delicacy—without letup, until the problem has been solved.



The stately honey locust in the foreground is at least 80 years old. When a huge branch fell off the left side of the trunk, Klinkenborg counted the rings.

FRENCH FARMHOUSE

An American couple's romantic renovation in the French countryside

BY TALA SKARI
PHOTOGRAPHS BY THIBAULT JEANSEN

When Americans Cathy Icardo and Tom Crissinger handed over 200,000 francs (about $40,000) to a notary in the little town of Morannes, France, three years ago, they were exhilarated. For their money, they were now the owners of a rustic farmhouse in the Anjou region, complete with 21 acres of land, a dilapidated barn, a puddle pond and a pigsty. Swept away by the moment, they raced over twisting country roads, past cornfields and hedgerows until they reached their new property. "We went into what is now the kitchen, took a sledgehammer to the stone wall and broke through two feet of rock," recalls Crissinger. It took them two hours, and they finished by clawing through the hole with their bare hands. "We found a wooden lintel and doorway into the living room that the previous owner didn't even know existed. We felt like explorers in our own house. It was so exciting," he says. That was just the first discovery in an on-site odyssey

The addition at this end of the old farmhouse was once a storage area, but is now a new kitchen graced by handcrafted windows and doors. Other recent work done using traditional techniques includes a newly tiled slate roof and the exterior walls' lime finish. The home owners are committed to renovating the house using as many authentic materials and techniques as possible.

that, in the three years since, has called for plenty of intrepid solutions—and more hard work than its owners ever imagined.

La Motte—the name means "hillock," apropos of the gentle rise on which it sits—is the picture of rustic romance. Approached via a dirt track off back roads that wind through cornfields and groves of trees, past modest farms and manors once held by the Catholic church, the long stone house unwinds into view followed by a delightfully overgrown garden, then a weathered barn, a pond and a thicket of woods beyond. Four charmingly skewed dormer windows lean from the house's steeply pitched roof above walls thick enough for a fortress, and the stable doors that used to shut in horses and cows at night hang crookedly from their hinges.

La Motte was the first property Icardo and Crissinger saw on their house hunt, and it was pretty much love at first sight—despite water dripping from the stone walls, the absence of flush toilets and cobwebs festooning the bath.

"I remember looking at the pigsty and thinking, 'That's where I'm going to put my future studio,'" recalls Icardo, a jewelry designer. Crissinger was more excited about La Motte's 21 acres and its private setting, sheltered by hedgerows of hawthorn and wild rose. For both, it was a far cry from the urban hustle they were used to. Icardo, a 39-year-old Californian, had been working as the art director of *Bijou* magazine in Paris. Crissinger, 46, had left his New York photographer's life behind to design "mostly commercial office space" for an architectural firm in Heidelberg, Germany—a grueling commute from Paris. By contrast, Mocannes, the closest town to La Motte (population 1,534, with one butcher, two bakers, a sausage maker, no traffic lights), seemed like the perfect antidote. "We've never lived in a place this isolated before, but we love it," says Icardo.

But what the couple really fell for was La Motte's history, the soul hidden in its old stones and oak beams. The previous owner, Roger Reze, described the two-day wedding feast he and his wife had cooked in the brick bread oven and the milk cows (Tulipe and Arlette) they'd stabled in the midsection of the building. After 40 years there, Reze had retired just down the road—a selling point for Icardo and Crissinger. "It was important to us to have neighbors we liked," she says. "And we liked Roger right away."

Without an abiding passion for their project, the couple might well have been daunted into giving up, or into taking an easier way out than the ambitious, hands-on approach they'd planned. They had a whole 3,000-square-foot house to restore—lacking modern conveniences and suffering from assorted problems, roughly a third of it once serving as animal mangers—a project so vast "it could take a lifetime," Crissinger says. Yet when it came to fixing their priorities, they were firm about one thing: the kitchen. "We both like to cook and entertain friends, and I love to garden," says Icardo, who pores over seed catalogs in her spare moments. "We wanted a warm, comfortable kitchen where we could spend a lot of time." Crissinger envisioned an open space to can and cook—no sleek designer kitchen with everything concealed in cupboards for him—with enough pantry shelving to store homemade preserves and a stove to accommodate, as he puts it, "a big flame and a good pot."

Before work began, the dilapidated kitchen-to-be could only be reached through this outside door and had neither plumbing nor access to the house's only heat source, a wood-burning stove in the main room, marked by the chimney at left. The previous owners cooked on a tiny gas stove in one corner of the living area.

The path from vision to reality took numerous unexpected turns. Though the abandoned stonetoom they'd chosen as their kitchen boasted direct access to the garden, it was the grimiest, wettest room in the house. Sun shone through roof holes, black mold coveted the walls, and 4 inches of water stood on the packed-earth floor. Years of accumulated rubble underfoot made it nearly impossible to stand up. "We started by carting out the empty wine bottles and digging out the floor," recalls Icardo, who ended most days looking, she says, like a coal miner at the end of a long shift. That turned out to be a Herculean task. To accommodate wiring and plumbing pipes, they decided to sink the kitchen floor by 15 inches. In the meantime, they dug out the rest of the living area as well. That meant taking up 800 square feet of antique terra-cotta tiles and shoveling out four truckloads of dirt.

"We've got muscles on muscles," says Crissinger, flexing his biceps. "We knew that humidity was a big problem in these old farmhouses, but people wouldn't have lived with mold growing up the walls for 200 years. Something had gone wrong."

To achieve the desired effect on their stone walls, home owners Tom Crissinger and Cathy Icardo concocted a mortar of slaked lime, sand, water and a dab of ocher pigment, slathered it on, let it harden, then scraped it down with a steel brush to reveal the stone's natural contours.

PHOTOS: LEFT TOM CRISSINGER

...surmounted by the deliberately casual, comforting clutter of equipment and ingredients.

PHOTOS LEFT: TOM CRISSINGER

Part of the difficulty, they soon learned, was simply bad restoration. For decades, many farmhouse owners, hoping to patch crumbling facades and give a flush, modern look to their centuries-old homes, coated the walls with cement—which, unfortunately, absorbs and holds humidity. La Motte was no exception. There wasn't an exposed stone in any of the rooms, even the outside walls wore a three-foot-high gray cement skirt. With hammer and chisel the couple painstakingly chipped it all away, inside and out, revealing beautifully tapered stone "rubble" walls (each one actually a pair of stone walls built close together, the space in between filled with small rocks, earth and debris). "We knew we had rock walls, but we didn't know they were this nice," says Icardo.

Adds Crissinger, "Every time I look at a wall, I think of the people who carried the stones here. They were building for their grandchildren." However, all the couple's work failed to uncover just who those people were. La Motte's massive walls and oak beams suggest a venerable past, but they found no dated cornerstones, no engraved initials. Apart from an 1869 inscription in the barn and an 1813 map showing La Motte, there's nothing to indicate the house's origins. Local historians suggest that the farm was probably part of a landed estate belonging to the local nobility whose feudal reign ended with the French Revolution. "It could be anything from 12th to 18th century," says Crissinger.

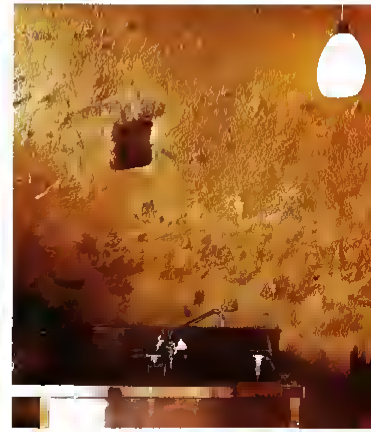
One thing they did know, however, was that this would not be the quick six-month fix-up they had anticipated. For the first year and a half, the couple commuted from a rented house nearby, then they towed in a small trailer while they worked to make the kitchen's basic structure sound. To give the room volume, they tore out the pine-slatted ceiling—it was "sagging like an old horse," says Crissinger—revealing the sharply angled roof line and creating an airy cathedral space that soars to 13 feet on the inside wall. To admit natural light and a centerpiece view of Icardo's raised-bed garden, a rambunctious mix of vegetables, herbs and flowers, they enlarged the main window and door openings, which meant dismantling the stone walls to widen the frame holes, then building them back up using handpicked fieldstones from the property.

A coffee-stained war board helped keep track of their growing to-do list and middle-of-the-night inspirations—but it didn't forestall rude surprises. With winter approaching that first year, they discovered that the kitchen's aged black-slate roof leaked profusely and needed to be replaced, a specialist's job requiring a professional roofer. "That was money we'd planned for a kitchen stove," Icardo says wistfully, recalling the deluxe $5,000 commercial model they had their hearts set on—and the "rinky-dink cheap" one they settled for. "But we decided not to skimp on things that were permanent."

Indeed, the deeper they plunged into restoring, the more committed they became to employing the techniques used by the original builders and salvaging materials from La Motte itself. For ceiling patching, they recycled *torchis*—a pungent mixture Icardo describes as "hay, mud, cow poop and a bit of horsehair"—from the pigsty. "People raised their eyebrows when we told them we were using *torchis*," says Crissinger. "That's what their grandfathers did." According to local wisdom, it's a perfect insecticide as well as a great insulator. The traditional techniques, in fact, not only proved cheaper in many cases, but also would be better for the house.

An invaluable source of practical advice was the Maisons Paysannes de France (MPF), a small nonprofit association dedicated to the preservation of old farmhouses. Its detailed booklets offer highly opinionated advice on everything from choosing appropriate door hinges to using lime to resurface stone walls and pour floors. "They're adamant: Don't use cement," says Crissinger. "It traps humidity. Use slaked lime." That, they discovered, was easier said than done. Where cement sets within hours, lime takes days to harden and more than a year to dry completely, a curing period during which the building may settle and redistribute stresses. And they soon realized that if they banned cement, which all the local builders threw into the mix, they'd have to do the masonry work themselves. And buy their own cement (or, in this case, lime) mixer. They did both.

Whenever they couldn't recycle or restore something themselves, the couple sought out dedicated local artisans. André Morin, a wryly philosophical cabinetmaker, could hardly believe his good fortune when the couple arrived at his workshop in nearby Daumeray to order custom-made oak windows and French doors. They were very precise. Not just any old style, but handcrafted ones



New electrical cables snake through paths routed into the kitchen wall (above) across a bed of gravel, later concealed by lime mortar (right). A six-inch-thick lime subfloor topped by terra-cotta tiles now covers pipes and wiring.

based on traditional designs—down to the mortised joints, chestnut pegs and cast steel hinges and handles. "Most people today want prefab windows, the kind you pop in," said Morin the day he arrived to fit the honey-colored frames into the kitchen's stone surrounds. "But I love this kind of restoration. It reminds me of the work I did when I first started."

When it came to electricity and plumbing, the house's basic conveniences were about as antiquated as the creaky well pump across the road. For Roger Reze's family, a chamber pot provided relief when the great outdoors proved too chilly, while the only heat in the house came from the eight-foot-tall fireplace in the main room. Once again, the couple ventured into unexplored territory and boldly did the prep work themselves, putting in the kitchen's socket and switch boxes and sculpting electrical cable runs through the craggy stonework. To ensure that the house would be comfortably warm during the area's damp, chilly winters, they opted for energy efficient, gas-fired hot-water heat. Scouring the area, they found what they needed in nearby Angers, the region's capital: nine used cast-iron radiators of varying heights and lengths, enough—when pulled apart and reassembled—to make seven perfectly fitted ones.

But the real piece de resistance is the burnished copper manifold fashioned by Patrick Haloupeau, a local plumber and electrician whom Crissinger describes as "an artist" and "a genius." To fit out the radiators, he cut ingoing and outgoing copper pipes, filled them with sand, then shaped them with a propane flame. Except for the work-of-art manifold visible in the utility room ("I promised him I'd polish it," says Crissinger), his handiwork lies buried in the kitchen's subfloor. His devotion to detail earned their respect, but what won their gratitude was the October day in 1997 (shortly after they'd moved into the house, taking cold baths in a cattle trough) when Patrick started up the heater and hot water began to flow through the pipes.

When slates started sliding off the roof, the owners dismantled it themselves before calling in a pro to retile it; they also consulted a local mason and are building the wall separating kitchen and utility room themselves (top). Doing away with the flat ceiling just above door level allowed them to turn a loft door into an extra window.

"We held our breath, then yelled, 'Whoooee! We have plumbing! We have hot water! We did it!'" recalls Crissinger.

The savory smells that have emanated from the kitchen since then are proof enough that the toil was worth it. With Reze's help, they've learned to make *rillettes*, a spicy pork pâte, and to savor the region's white wines as they relax from ongoing work elsewhere in the house. The kitchen has the spare yet comfortable country feel they wanted. The 100 year-old terra-cotta floor tiles contrast warmly with the stainless-steel double sink and tiny halogen ceiling spots, while the straw-colored, lime coveted stone walls—resurfaced to mask the electrical wiring—lend a clean, light look. Local flea markets and antiques fairs have yielded a wealth of copper pots and used preserving jars, all of which are within easy reach. There's not a cabinet in sight. Gray metal shelving braces and wooden planks hold everything from crockery pots and dried pasta to home-jarred beets and tiny, sweet garden pickles (*cornichons*). Last fall's harvest was an imaginative cornucopia, ranging from speckled hutlatto beans and bull's horn peppers to Aztec sunflowers, Edward VII potatoes and purple-ruffled basil.

"And zucchinis as big as Volvos," Icardo says, laughing. "We spent so much time on the house that the garden got a little out of hand."

In a century or two, whoever owns La Motte may well be grateful that they did. In a large canning jar Crissinger and Icardo have put photos of themselves and their two cats, an old 100-franc coin, some bean seeds from the garden, a pit from the plum trees out back and a handwritten note. "We said who we were, when we restored the house, and that we hoped they would take care of it too," says Icardo. Adds Crissinger, "And we asked for their respect." Solemnly, they sealed the time capsule and buried it for future explorers to find. It's somewhere safe around the house; they won't say where. Perhaps in the old stone walls, or maybe under the nicely worn antique floor tiles. ■

PHOTO: OPPOSITE TOM CRISSINGER

What Icardo and Crissinger really fell for was the farmhouse's history. The soul hidden in its old stones and oak beams.

In the main room, oak beams and a hearth with a brick bread oven attest to the home's age. Here, too, Crissinger and Icardo refinished the walls and relaid the terra cotta tiles.

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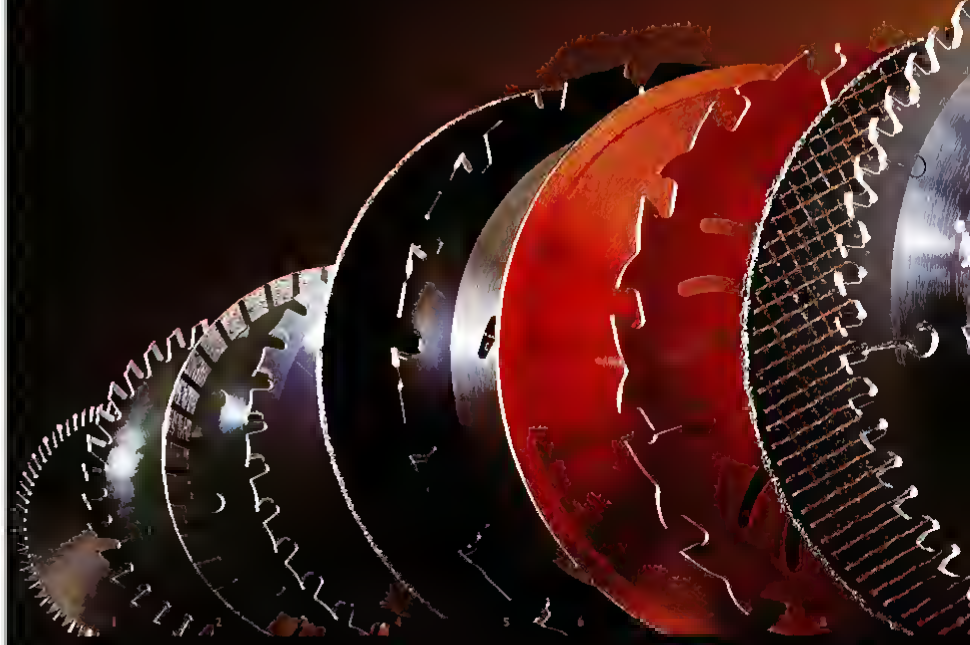
BLADE

CIRCULAR SAW



1 MODELING
For small-scale cuts, dollhouse builders use 3⅜-inch all-steel blades mounted on tiny table saws.

2 TRIM
Fitted to a small trim saw, the 4⅜-inch carbide-tipped blade handily crosscuts thin stock.

3 DIAMOND MASONRY
Diamonds in the rim of this blade slice through brick, stone and block, no water bath needed.

4 CORDLESS
Ultrathin (.039 inch) is useful when power is in short supply. The blade also cuts nonferrous metals.

5 ABRASIVE METAL
Attached to a circular saw, the aluminum oxide disk slices steel and nonferrous metals.

6. REMODELING
Boron-hardened carbide and wide shoulders let this slick blade zip through nails.

ES

7 DIAMOND TILE
The industrial-quality diamonds embedded in the rim have to be cooled with water when trimming tile.

8. DECKING
A Teflon-coated carbide-tipped blade is for ripping through soggy pressure-treated wood.

9 ABRASIVE MASONRY
A silicon-carbide wheel turns a circular saw into a tool for cutting stone, block and brick.

10 NONFERROUS METAL
On a chop saw, this carbide-tipped blade slices through copper pipe and aluminum channel.

11 DADO
Chippers sandwiched between dado blades plough rabbets and dadoes up to 25/32 inch wide.

12 BRUSH CUTTER
When attached to gas trimmers, this lightweight blade makes fast work of saplings and shrubs.

13 MELAMINE
The 80 backward-leaning teeth nibble chip-free cuts in the plastic skins on particleboard.

14 PLYWOOD
Its 200 small steel teeth make splinter-free cuts in plywood, laminate and other thin materials.

15 RIPPING
Thin-kerf sawblades (⅛ inch thick or less) consume less power and cut with less waste.

16 CROSSCUT
Coated with Teflon, polished carbide teeth slip through solid wood and plywood.

17 COMBINATION
Periodic deep gullets and square-topped rakers help this blade cut with the grain or across it.

18. PLANER
A 12-inch all-steel blade for radial-arm saws cuts smooth edges in trim and plywood.

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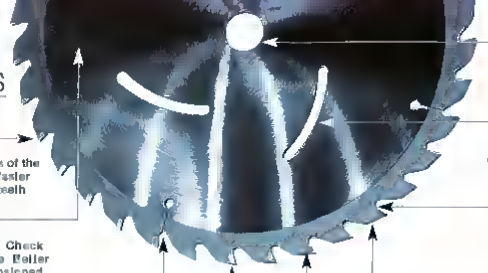
blade basics



ARBOR HOLE
Holds the blade to the tool. A smooth deburred edge is a sign of quality.

SOUND SLOTS
Reduce the harmonic vibrations that cause blade wobble and running noise.

GULLET
Stops chips and sawdust from clogging the teeth.

SHOULDER
Supports the teeth. Wider is better if there's a chance of hitting a nail.

BRAZING
Bonds the carbide teeth to the steel plate. Use a magnifying glass to check that the "welds" are smooth and pit-free.

CARBIDE TOOTH
Available in various carbide alloys, from the resilient but quick dulling to the brittle but supersharp. Look for a smooth, mirror-bright finish; one key to sharpness. The more carbide that sticks up above the shoulder, the more times the blade can be sharpened.

EXPANSION SLOTS
Reduce the warping that results when a blade's edge heats up.

PLATE
Should remain dead flat. Check flatness with a straightedge. Better blades have a ring of tensioned metal to reduce distortion under heat and pressure.

RAKE OR HOOK ANGLE
Determines the speed and smoothness of the cut. Teeth can be angled forward for faster and rougher cutting. Negative-hook teeth make slower, smoother cuts.

caring for saw blades

A blade kept in peak condition will make satisfying cuts over the long haul. Ignore a blade's needs, and it will turn mulish, cutting slowly and sloppily and threatening its owner with kickback.

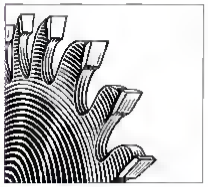
CLEAN Spray blades regularly with pitch remover or automotive choke cleaner to remove gum and resin buildup, which dulls teeth and increases friction. For heavy buildup, soak blades in kerosene or a commercial blade cleaner and wipe clean with a dry cloth.

SHARPEN A dull blade is not necessarily done for. Sharpening services charge about $20 to get a 60-tooth blade back in shape. Replacing missing or broken teeth costs about $3 each.

PROTECT Store blades with care. Carbide is brittle and teeth will chip if knocked around inside a toolbox. Hang individual blades on their own pegs, or insert cardboard or plywood spacers between blades before wrapping them in paper. A spritz of light machine oil halts rust, but wipe off the excess before cutting.

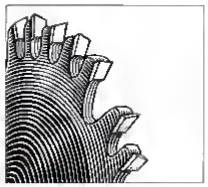
tooth talk

Scrutinize a blade the way you would a horse, by looking at the teeth. Their grind pattern and number determine which kind of cutting best suits them. Blades with fewer teeth (20 to 40) are good for heavy ripping. Those with more (50 to 80) promise clean, precise crosscuts.

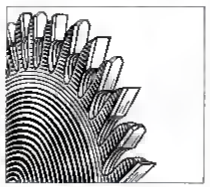


FLAT TOP (FT)
Square-tipped widely spaced teeth are meant for ripping wood (cutting with the grain).

ALTERNATE TOP BEVEL (ATB)
Pointed teeth with angled faces make smooth crosscuts and miters in wood.



ALTERNATE TOP BEVEL & RAKER (ATB&R)
Flat-topped raker teeth (and deep gullets) combine with ATB teeth to rip and crosscut.



TRIPLE CHIP GRIND (TCG)
Chamfered-edge teeth alternate with flat-topped rakers for slicing particleboard and plastics.

ILLUSTRATIONS BY JEREMY HOMER

ON THE CUTTING EDGE

The spinning megagigabyte disks that animate computers may get all the press, but a circular saw blade is no less of a technological marvel. Sophisticated metallurgy and design enable blades to sunder miles of wood, metal, concrete, stone and tile and to do the job with unwavering accuracy while enduring brutal levels of abrasion, heat and stress. Delicate hard drives are handy, but saw blades have literally carved out much of our built world.

A modern blade springs from more than two centuries of tweaking. Although historians suspect that an inventor in 17th-century Holland may have been the first to transform a straight saw into a toothed circle, the earliest known patent, dating to 1777, was issued in England. One early and lasting improvement, borrowed from handsaws, was "setting" the teeth, alternately canting them left and right to plow a kerf wide enough for the saw plate to slip through without binding. A century ago, blade makers learned how to stop friction-induced warping by carving slots between teeth to allow the rim to expand without distortion. And about 50 years ago, blade teeth began sporting little chunks of tungsten carbide, an alloy that stayed sharp up to 40 times longer than steel.

But to really appreciate a blade, feed it some wood. A 10-inch table-saw blade whirling at 4,000 revolutions per minute has razor-edged teeth moving at 119 miles per hour, fast enough that they virtually atomize any wood they encounter. Offered a plank, a good 80-tooth blade makes 5,300 bites a second without deviating more than .003 inch from a circular path. It takes just a few seconds, yet the cut edge is as straight as a laser beam and so wonderfully smooth that it barely needs sanding.

BY BRAD LEMLEY

PHOTOGRAPHS BY BRUCE WELLER

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PHOTO: JOE TOTKINS

A Welcome Addition

An 18th-century house meets the needs of a 20th-century family

BY REBECCA REIGNER

"The house was so pulled apart during the renovation that there was no plumbing," recalls home owner Terry Maitland, pictured with his wife, Sima, Norm Abram and Steve Thomas. "We chased our friends around—when they went on vacation, we stayed in their empty houses. We moved five times and then finally got a short term rental."

Week 3 (April 3-4)

As the renovation continues at Sima and Terry Maitland's 1710 house in Acton, Massachusetts, the crew prepares to install an upgraded septic tank and the new ell's foundation. Terry Maitland chops down a ell-puny elm that stands in the way of progress. Herb Brockert rolls in with the heavy equipment to move rocks and soil. Later, young Ef Maitland gets a lesson in excavator operation. Beyond the fray, architect Chris Dallmus gives Steve Thomas a guided tour through a three-dimensional model of the renovated house.

Watch and learn: Marking excavation lines.

Resources: Laser level: Laser Tools Co., 3520 W. 65th St., Suite 401, Little Rock, AR 72209, 501-562-0900. Pre-excavation utility checking: Dig Safe System Inc., 331 Montville Ave., Woburn, MA 01801, 888-344-7233. Excavation contractor: Construction Services Co., Inc., 100 Gretchen La., Hollston, MA 01746, 508-429-1410. Septic contractor: G. Nichols Construction Co., Inc., 28 Jackson Dr., Acton, MA 01720, 978-263-7058. Septic tank and distribution box: E.F. Shea Concrete Products Inc., Box 520, N. Wilmington, MA 01887, 800-696-7432. Architect: Design Associates Inc., 432 Columbia St., Cambridge, MA 02141, 617-661-9082. Windows: Andersen Corp., 100 Fourth Ave. North, Bayport, MN 55003-1096, 651-439-5150.

Week 4 (April 10-11)

Sobering realizations stream in as Norm Abram and Tom Silva get an up-close and personal view of the house's infrastructure. Among the discoveries: a deteriorating rubblestone foundation, a water-damaged sill and a beam so poorly supported that Tom says it seems to "float in mdalt." Nonetheless, George Neuman pulls up with his concrete-mixing machine and starts on the footings. Steve drives to Belmont, Massachusetts, to drop in on Lauren and Dean Gallent for a look at the previous year's tall project house in all its renovated glory. Back in Acton, a truck arrives bearing a preformed concrete foundation.

Watch and learn: Supporting a house during sill repair.

Resources: Trash storage and removal service: D.F.I. Waste Systems Inc., Box 345, Auburn, MA 01501, 508-832-9001. Excavation contractor: Construction Services Co., Inc., 100 Gretchen La., Hollston, MA 01746, 508-429-1410. Small-batch concrete delivery service: Concrete Express Inc., Box 8, Natick, MA 01760, 508-653-1512. Preformed foundation system: Superior Walls of America Ltd., Box 427, Ephrata, PA, 800-452-9255. Urethane caulk for foundation: Bostik Inc., 211 Boston St., Middleton, MA 01949, 978-777-0100. Transit truck concrete: Middlesex Concrete, 50 Ayer Rd., Littleton, MA 01460, 3054, 800-298-0088 in Massachusetts or 978-456-8600. Concrete finishers: Syel March Concrete Construction, 1465 Main St., Tewksbury, MA, 978-851-7200. Aerial lift: Shaughnessy Aerialifts, 345 D St., S. Boston, MA 02127, 617-268-3000.

Week 5 (April 17-18)

Steve arrives on site to find a fresh load of framing lumber. With the foundation for the addition completed, Tom explains why postponing the backfill makes sense. Terry Maitland demonstrates how he protects the wooden floors during construction. Meanwhile, Steve gets a closer look at a damaged basement beam that could spell trouble. Then Steve travels to a gorgeous 1750 house that orig nally served as a tavern. The restored and expanded structure includes a new kitchen designed to look old, complete with a tiger maple island. Having missed the rain in Acton, Steve returns to find Tom and Norm doing some unanticipated maintenance work.

Watch and learn: Attaching an addition.

Resources: Engineered and dimensional lumber: Georgia Pacific Corp., 133 Peachtree St., N.E., Atlanta, GA 30303, 800-284-5347. Tavern-house contractor: Early New England Restorations Inc., 273 Pendleton Hill Rd., N. Stonington, CT 06359, 860-599-4393.

Week 6 (April 24-25)

The framing crew has completed the first floor of the ell and it's time to set—with extreme care—the 1,500-pound steel I beam that will support the second floor. Steve then pitches in as the whole crew works away at constructing the top level. In the cellar, Terry Maitland mixes up a small batch of concrete to form the footing of a missing steel structural column. A lead paint inspector employs the latest technology to determine toxicity, ultimately delivering a mixed review. Tom discusses how to compensate for water damaged infrastructure. Finally, a lightning protection inspector sees up the house for safety.

Watch and learn: Preventing new floors from squeaking.

Resources: Metal hanger nailing gun: MCN 65, Stanley Bostitch Inc., Route 2, E. Greenwich, RI 02818, 800-556-6896. Plywood and Code Plus Building Program: American Plywood Association, Box 11700, Tacoma, WA 98411-0700, 800-638-9972. Lead paint safety testing service: Galeota Associates, Box 2053, Littleton, MA 01460, 800-425-3682 in Massachusetts or 978-456-8518. Lightning protection analysis: Underwriters Laboratories Inc., 333 Pfingsten Rd., Northbrook, IL 60062-847-272-8800.

"Building the ell was easy—new construction always is," Steve says of the Acton addition. "The renovation got really interesting in places that old and new components had to marry. Tom Silva ran laminated beams through the old part of the house, through the windows, to connect the addition."

PHOTOS: TOM/NO HOWARD/WGBH TV

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43	Controlled Energy *Tankless Gas Water Heater*	800 642 3199
44	Cottage Lane Accents *Lighting, Doors & Cabinets, Accessories, Gifts*	888 244 8880
	Crownpoint Cabinetry *Handcrafted To The Finest Quality*	800-999-4994
45	Endless Pools *Swim At Home*	800-732 8660
46	F & S Manufacturing *Concrete Construction Tube Footing Forms*	800 934-0393
47	Fine Paints of Europe *Schreuder Paints & Omega Brushes*	800-332 1556
48	Gorilla Glue *Bonds Wood, Stone, Metal & More*	800 966 3458
49	Granville Mfg. Quartersawn Clapboard *Siding, Trim, Flooring & Roofing*	802 767-4747
50	Hardware Bath & More *Your Source For Hardware*	800 760-3278
51	Jannock Vinyl *Maintenance Free Vinyl*	800-473 3623
52	Kodiak *Environmentally Safe Pressure-Treated Wood*	800 K Kodiak
	Lindal Cedar Homes *Custom Designed Cedar Homes*	800-426-0536
53	Nu Wal *Restoration Products*	800-247 3932
54	Rejuvenation Lamp & Fixture Co. *Lighting Fixtures*	888-343 8548
55	Research Products/Blankenship *Incinolet- First Ever Incinerator Toilet*	800-527 5551
56	Royal Crown Ltd *Brook Deck Systems Vinyl Deck*	800-488 5246
57	S & S Mills Carpet *Buy Direct From The Mill & Save*	800 392 6893
58	Salter Industries *Spiral Stair Kits*	610-631-1360
59	Southern Wood Floor *Hardwoods & Floors*	888-488PINE
60	Spiral Stairs of America *Spiral Stairs*	800-422 3700
61	Stadler *Radiant Heating & Snowmelting*	800-370 3122
62	Stairways, Inc. *Stairways*	800-231-0793
63	SunPorch Structures, Inc *Convertible Sunroom*	www.sunporch.com/hsr
	Timberlane Woodcrafters *Handcrafted Shutters*	800 250 2221
64	The Iron Shop *Spiral Stair Kits*	800 523-7427
65	Thos. Moser Cabinetmakers *Cabinets, Furniture*	800 708-9703
66	Trade Secrets *Home Improvement Products*	800 272-0021
67	Unico *Central Heating And/Or Central Air*	800 527-0896
68	Xypex Chemical Corporation *Concrete Waterproofing Made Easy*	888-443-7922
69	Yestertec *Manufacturers of Kitchen workstation furniture*	www.yestertec.com

This Old House

Where and when to watch This Old House *and* This Old House Classics

● indicates *This Old House* Specials, vintage episodes rebroadcast as commercial PBS fillers.

TV SCHEDULE

ALABAMA

BIRMINGHAM
WBIQ, Thu. 8:30 p.m., Sat. 6 p.m.
● WCFT Sun. 7:30 a.m.
● WJBU Sun. 9:30 a.m.

DECATUR
WBIQ Thu. 8:30 p.m., Sat. 8 p.m.

DOTHAN
WBIQ, Thu. 8:30 a.m., Sat. 8 p.m.

FLORENCE
WBIQ, Thu. 8:30 a.m., Sat. 8 p.m.

HUNTSVILLE
WHI Q, Thu. 8:30 p.m., Sat. 8 p.m.
● WYLE, Sat. 8 p.m.

LOUISVILLE
WBIQ, Thu. 6:30 p.m., Sat. 9:30 p.m.

MOBILE
● WALA, Sat. 8 a.m.
WEIQ, Thu. 9:30 p.m., Sat. 8 p.m.

MONTGOMERY
WAIQ, Thu. 8:30 a.m., Sat. 6 p.m.

MUSCLE SHOALS
WCIQ Thu. 8:30 p.m., Sat. 8 p.m.

ALASKA

ANCHORAGE
KAKM Mon. 8 p.m.
Thu. 8 pm., Sat. 6:30 a.m.
● KIMO Sun. 5 p.m.

FAIRBANKS
KUAC, Fri. 8 p.m., Sat. 8 a.m.
● KATN, Sun. 5 p.m.

JUNEAU
KTOO, Fri. 8 p.m., Sat. 6 a.m.
● KJUD, Sun. 5 p.m.

ARIZONA

PHOENIX
KAET Thu. 8 p.m. and 7:30 p.m., Sat. 10 a.m. and 8 p.m.
● KNXV, Sun. 10 a.m.

TUCSON
KUAS, Sat. 11 a.m. and 8:30 p.m.
KUAT Sat. 11 a.m. and 10:30 p.m.
● KVTU, Sat. 5 p.m.

ARKANSAS

ARKADELPHIA
KETG, Sat. 12:30 p.m.

FAYETTEVILLE
KAFT Sat. 11:30 a.m.

JONESBORO
KTEJ Sat. 12:30 p.m.

LITTLE ROCK
KETS Sat 12:30 p.m.
● KTHV Sun. 10:30 a.m.

MOUNTAIN VIEW
KCMV Sat 12:30 p.m.

CALIFORNIA

BAKERSFIELD
● PUVL Tues. 1:30 a.m., Sat., 8 a.m.

CHICO
● KHCB, Sun. 9 p.m.

DIGITAL
● KCSD, Sun. 9 p.m.

FRESNO
KMJT Wed. 7:30 p.m., Sat. 10:30 a.m.
● KAEF Sun. 9 p.m.

HUMBOLDT
● KVIQ Fri. 9 a.m.
PVPT Sa 9:30 a.m. Sun. 9 p.m.

HUNTINGTON BEACH
KOCE, Sat 4:30 p.m. Sun. 9 p.m.

LOS ANGELES
KCET Sat 11:30 p.m.
● KABC, Sun. 9 a.m.

MONTEREY/SALINAS
● KCBA, Sun. 8:30 a.m.

PALM SPRINGS
● KPSP, Sun. 8 a.m.

SACRAMENTO
● KVIE, Thu. 9 p.m., Sat. 8:30 a.m.

SAN BERNARDINO
KVCR Thu. 9 p.m.

SAN DIEGO
KPBS, Sat. 10:30 a.m.
● KGTV Sun 11:30 a.m.

SAN FRANCISCO
KQED Sat. 5 p.m.
● PBS, Sun. 9:30 p.m.

SAN JOSE
KTEH, Sat. 5 p.m., Sun. 4:30 p.m.

SAN MATEO
KCSM, Tues. 6:30 p.m., Sun 10 a.m.

SANTA BARBARA
● KSBY Sun. 9 a.m.

COLORADO

BOULDER
KMH, Wed. 5:30 a.m. and 8:30 p.m. Sat. 1:30 p.m., Sun. 4 p.m.

COLORADO SPRINGS
● KRDO, Sun. 11:30 a.m.

DURANGO
KRMA Sat. 2 p.m., Sun. 1:30 p.m.
● KCNC, Sun. 1 a.m.

GRAND JUNCTION
● KJCT Sat 1 p.m.

PUEBLO
KTSC, Thu. 7:30 p.m., Sat 1 ½ p.m.

CONNECTICUT

DANBURY
WEDW, Thu. 10:30 p.m., Fri. noon, Sat. 9 p.m., Sun. 10:30 a.m.

HARTFORD
WEDH Thu 11:30 p.m., Fri. noon, Sat 9 p.m., Sun. 10:30 a.m.

NEW HAVEN
WEDY Thu 11:30 p.m., Fri. noon, Sat 9 p.m., Sun. 10:30 a.m.

NORWICH
WEDN, Thu. 11:30 p.m., Fri. noon, Sat. 9 p.m., Sun. 10:30 a.m.

DISTRICT OF COLUMBIA

WETA Sat 9:30 a.m.
● WRC, Sun. 3:30 a.m.
and 1:30 p.m.

FLORIDA

DAYTA SPRINGS
● WCCU, Sat. 12 p.m., 12:30 p.m., Sat. 1:30 p.m., Sun. 9 p.m.

DAYTONA ORMOND
WCEU Tue. 9 p.m., Sat. 9:30 p.m.

FORT MYERS
● WTVK Sa 9:30 a.m.

GAINESVILLE
WUFT Sat 9:30 a.m., 1:30 p.m.
● WCJB, Sat. 2 p.m.

JACKSONVILLE
● WJXT, Sat. 6:30 a.m.
WJCT, Sat. noon

MIAMI
WLRN Sun. 9 a.m.
WPBT, Sat. 9 a.m.
● WSVN, Sat. 6:30 a.m.

ORLANDO
● WKCF Sat. 4 p.m.
WMFE, Sat. 8 a.m. and 1 p.m., Sun 9 a.m.

PENSACOLA
WSRE, Sat. 12:30 p.m. and 6 p.m.

SARASOTA
● WWSB, Sun 11:30 a.m.

TALLAHASSEE
WFSU, Sat. 1:30 p.m. and 9 p.m.

TAMPA
● WEDU, Sat. 12:30 a.m.
WUSF Wed. 8 p.m., Sun. 5:30 p.m.
● WTVT Sat 9 a.m.

WEST PALM BEACH
● WPTV, Sun. 9 a.m., 12:30 p.m.

GEORGIA

ALBANY
● WGVP Sun. 8 a.m.

ATLANTA
WGTV, Thu. 8:30 p.m. Sat. 5:30 p.m., Sun. 9 p.m.
WPBA, Mon. 9 p.m., Wed. 2 p.m., Sat 9 p.m.
● WXIA, Sat. 5 a.m. and 1:30 p.m.

CHATTANOOGA
WCLP Thu. 6:30 p.m., Sat 9:30 a.m. Sun. 9 p.m.

COCHRAN
WDCO, Thu. 6:30 p.m., Sat. 9:30 a.m. Sun. 7 p.m.

COLUMBUS
WSP, Thu. 8:30 p.m., Sat. 9:30 p.m., Sun. 9 p.m.

DAWSON
WACS, Thu. 6:30 p.m., Sat. 9:30 p.m., Sun. 9 p.m.

MACON
● WMAZ, Sat. 9 p.m.

PELHAM
WABW, Thu. 6:30 p.m., Sat. 5:30 p.m., Sun. 9 p.m.

SAVANNAH
WVAN Thu. 8:30 p.m., Sat. 5:30 p.m. Sun. 9 p.m.
● WTOC, Sat 1 a.m.

WAYCROSS
WGCA, Thu. 9:30 p.m., Sat. 5:30 p.m., Sun. 7 p.m.

WRENS
WCES, Thu. 8:30 p.m. Sat. 5:30 p.m., Sun. 9 p.m.

HAWAII

HONOLULU
KHET Sat. 7:30 a.m.
● KHVH, Sat. 9:30 p.m.

WAILUKU
KMEB, Sat. 7:30 a.m.

IDAHO

BOISE
KAID, Sun. 9:30 p.m.
● KTVB, Sun. 6:30 a.m.

COEUR D'ALENE
KCDT Sun. 1:30 p.m.

POCATELLO
KUID, Sun. 3:30 p.m.

TWIN FALLS
KMTF Sun 4:30 p.m.

ILLINOIS

CARBONDALE
WSIU Thu 9 p.m., Fri. 12:30 p.m., Sat. 12:30 p.m.

CHAMPAIGN/URBANA
● WCIA, Fri. 8:30 a.m.
WILL, Thu. 9:30 p.m., Sun. 1:30 p.m.

CHARLESTON
WEIU, Sat. 8:30 p.m.

CHICAGO
WTTW, Thu. 7:30 p.m., Thu. 1:30 a.m.
● WFLD, Sat. 6:30 a.m.

JACKSONVILLE
WIEC, Thu. 10 p.m., Sat. 10:30 a.m.
● KSDW, Sat. 6:30 a.m.

MACOMB
WMEC, Thu. 10 p.m., Sun. 1:30 p.m.

MOLINE
WQPT, Thu. 9 p.m., Sat. 9:30 p.m.

OLNEY
WUIL, Thu. 9 p.m., Fri. 12:30 p.m., Sat. 2:30 p.m.

PEORIA
● WTVP Fri. 8:30 a.m., Sat. 12:30 p.m.,
● WHOI, Fri. 5:30 p.m.

QUINCY
WQEC, Thu. 10 p.m., Sun. 1 p.m.

ROCKFORD
● WTVO, Sat. 6:30 p.m.

SPRINGFIELD
● WICS, Sat 7 a.m.

INDIANA

BLOOMINGTON
WTIU, Thu. 11 p.m., Sat. 12 p.m.

EVANSVILLE
WNIN, Sat. 12:30 p.m. and 9 p.m.
● WFIE, Sun 9 a.m.

FORT WAYNE
WFWA, Sat. 9 a.m.
● WPTA, Sun. 9 a.m.

INDIANAPOLIS
WFYI, Sat. 10 a.m., Sun. 6 p.m.
● WAEV Sat. 9:30 a.m.
● WTHR Sun. 8:30 a.m.

MERRILLVILLE
WYIN, Thu. 9 p.m., Sun. 2:30 p.m.

MUNCIE
WIPB, Sun. 9 a.m.

QUEEN BEND
● WNDU Sun. 7 a.m.
WNIT Wed 9 p.m., Sat. 2 p.m.

TERRE HAUTE
● WTWO Sun. 8 a.m.

VINCENNES
WVUT Sat. 12:30 p.m.

IOWA

CEDAR RAPIDS
● KWKT, Sat. 10 a.m.

CENTRAL ILLINOIS
PBN Fri. 6:30 p.m. Sat. 1:30 p.m.

DAVENPORT
KQCT Tue. 7 p.m., Sat. 9:30 p.m.
● WQAD Sun. 11 a.m.

DES MOINES
PBN Fri. 6:30 p.m., Sat. 1:30 p.m., Sun. noon

FORT DODGE
KTIN, Fri. 8:30 a.m., Sat. 1:30 p.m.

IOWA CITY
KIIN Fri. 8:30 p.m. Sat. 1 p.m.

MASON CITY
KIIN, Fri. 8:30 p.m., Sat. 1:30 p.m.

RED OAK
KHIN, Fri. 6:30 p.m., Sat 1:30 p.m.

WATERLOO
KBIN, Fri. 6:30 p.m., Sat 1:30 p.m.

KANSAS

GOODLAND
KTWU, Thu. 11 p.m., Sat. 12:30 p.m.

LARNED
KSWK, Thu. 9 p.m., Sat. 12:30 p.m.

TOPEKA
● KSNT Sat. 9 a.m.
KTWU Sat 9:30 a.m.

WICHITA
KPTS, Sat 10 a.m.,
Sun. 10 a.m.
● KSNW, Sat. 6:30 a.m.

KENTUCKY

ASHLAND
WKAS, Sun. 9 p.m.

SPOKANE KRENE
WKGB, Sat. 4 p.m.
WKYU Thu. 1 p.m. and 9:30 p.m.
● WHAS Sun. 8:30 a.m.

CINCINNATI
WCVN, Sun. 1 p.m.

ELIZABETHTOWN
WKZT Sun. 8 p.m.

HAZARD
WKHA, Sun. 5 p.m.

LEXINGTON
WLE, Sun 5 p.m.
● WTVQ, Sat. 9 a.m.

LOUISVILLE
WKMJ Fri. 7:30 p.m.
WKPC, Sun. 9 p.m.
● WAVE, Sat. 8:30 a.m.

MADISONVILLE
WKMA, Sun 5 p.m.

PIKEVILLE
WKAR, Sun. 5 p.m.

SHARPE
WKAU Sun. 9 p.m.

OWENSBORO
WKOH Sun 4 p.m.

OWERTON
WKON, Sun 9 p.m.

PADUCAH
WKPD, Sat. 5 p.m.
● WPSD Sun. 11 a.m.

PIKEVILLE
WKPI Sun. 5 p.m.

SOMERSET
WKSO, Sun. 1 p.m.

LOUISIANA

ALEXANDRIA
KLPA, Sun. 10 a.m.

BATON ROUGE
KLPB, Sun. 10 a.m.
● KWBJ, Sun. 9 p.m.

LAFAYETTE
KLPB, Sun. 10 a.m.

LAKE CHARLES
KETL, Sun. 10 a.m.

MONROE
KLTM, Sun. 10 a.m.

NEW ORLEANS
WYES, Sat 10:30 a.m.
● WVUE, Sat. 9 a.m.

SHREVEPORT
KLTS, Sun. 10 p.m.
● KTBS, Sun. 9:30 a.m.

MAINE

BANGOR
WMEB, Sat 1:30 p.m.

CALAIS
WMEB Sat. 1:30 p.m.

LEWISTON
WCBB, Sat. 1:30 p.m.

PORTLAND
WMEA, Sat. 1:30 p.m.
● WPXT, Sun. 10:30 a.m.
● WXBL, Sun. 6 a.m.

PRESQUE ISLE
WMEH Sat. 1:30 p.m.

MARYLAND

ANNAPOLIS
WHFT Sat. 9:30 p.m., Sun. 8:30 p.m.

BALTIMORE
WMPB, Sat. 9:30 p.m., Sun. 4:30 p.m.
● WBAL, Sat., 11:30 a.m.

FREDERICK
WFPT Sat. 9:30 p.m., Sun. 10:30 p.m.

HAGERSTOWN
WWPB, Sat. 9:30 p.m., Sun. 10:30 p.m.

SALISBURY
WCPB, Sat 9:30 p.m.
Sun 4:30 p.m.

MASSACHUSETTS

BOSTON
WGBH Thu. 8 p.m.–Sat. 9:30 p.m.
WGBX, Sun. 9 a.m.
● WNEV, Sun. 10 a.m.

SPRINGFIELD
WGBY Thu. 9 p.m., Sat. 9:30 p.m.

MICHIGAN

ALPENA
WCML, Sat. 2:30 p.m.

BIG RAPIDS
WLCS, Thu. 12:30 p.m., Sun. 9 p.m.

CADILLAC
WCMW, Sat. 2:30 p.m.
● WWTV/WWUP Sun. 10:30 a.m.

DETROIT
WTVS, Thu. 8:30 p.m., Fri. 1 a.m., Sat. 10 a.m.
● WDIV, Sat. 6:30 a.m.

EAST LANSING
WKAR, Thu. 8 p.m.
Sat. 1:30 p.m. Sun. 9 p.m.

FLINT
WFUM, Thu. 9:30 p.m., Sat. 9:30 p.m.
● WEYI Sun. 10:30 a.m.

GRAND RAPIDS
WGVU Thu. 8:30 p.m., Sat. 10 a.m.
● WOTV Sat. 2:30 p.m.

KALAMAZOO
WGVK Thu 8:30 p.m., Sat 10 a.m.

LANSING
● WLAJ Sat. 9 a.m.

MARQUETTE
WCMW, Sat 1:30 p.m.

MARQUETTE
WNMU Sat. 1:30 p.m.

MOUNT PLEASANT
WCMU Sa 2:30 p.m.

UNIVERSITY CENTER
WUCM Tue 12:30 p.m. Sun 9 p.m.

MINNESOTA

APPLETON
KSMN, Sat 12:30 p.m., Thu. 8 p.m.
KWCM, Sat. 12:30 p.m.
Thu. 8 p.m.

ELY
KSMQ, Thu. 8 p.m., Sat. 12:30 p.m.

DULUTH
KAWE, Thu. 7:30 p.m., Sat. 12:30 p.m.

FARIBAULT
KAWE, Thu. 7:30 p.m., Sat. 12:30 p.m.

MINNEAPOLIS
KTCA, Wed. 8:30 p.m., Sat. 8 10 p.m.
● WCCO, Sat. 9 a.m.

ST. PAUL/MINNEAPOLIS
KTCA, Wed. 8:30 p.m., Sat. 8 10 p.m.
● KSTP Sat. 8:30 a.m.
● KSAX, Sat. 8:30 a.m.
● KSWT Sat. 8:30 a.m.

MISSISSIPPI

BILOXI
WMAH, Sat. 6:30 p.m.

BOONEVILLE
WMAE, Sat. 6:30 p.m.

AKON
WMAU, Sat. 6:30 p.m.

COLUMBUS/TUPELO
● WCBI, Fri 1:30 a.m.

GREENWOOD
WMAO, Sat. 6:30 p.m.

JACKSON
WMPN, Sat 6:30 p.m.

NATCHEZ
WMAW Sat. 9:30 p.m.

OXFORD
WMAV Sat 8:30 p.m.

MISSOURI

COLUMBIA
● KMOU, Sun. 5 a.m.

JOPLIN
● KOAM, Sat. 9 a.m.
KODE, Sat. 12:30 p.m.

KANSAS CITY
KCPT Thu. 9 p.m., Sat. 12:30 p.m.
● KSHB, Sat. 6:30 a.m.

ST. LOUIS
KETC, Wed. 12:30 p.m. Sat. 8:30 p.m.
● KTVI Sat 12:30 p.m.

SEDALIA
PBS, Sat. 12:30 p.m.

SPRINGFIELD
● ODZK Sat 12:30 p.m.
● KOZL, Sat. 9 a.m.

MONTANA

BILLINGS
● KULR/KYUS, Sun. 9:30 a.m.

BOZEMAN
KUSM, Wed. 11:30 p.m.
Sat. 11:30 a.m.

MISSOULA
KUFM, Wed. 11:30 p.m.
Sat. 11:30 a.m.

NEBRASKA

ALLIANCE
NETV Sat. 10 a.m. and 1:30 p.m.

BASSETT
NETV Sat. 10 a.m. and 5:30 p.m.

HASTINGS
NETV, Sat. 10 a.m. and 9:30 p.m.

KEARNEY
KLNE, Sat. 9 a.m. and 9:30 p.m.

LINCOLN
NETV Sat. 10 a.m. and 5:30 p.m.
● KHAS, Sat. 5 p.m.

MCCOOK
NETV, Sat. 10 a.m. and 8:30 p.m.

NORFOLK
NETV, Sat. 10 a.m. and 5:30 p.m.

NORTH PLATTE
NETV Sat. 10 a.m. and 9:30 p.m.

OMAHA
● WOWT, Fri. 5 p.m.
Sun. 9 a.m.
NETV Sat. 10 a.m. and 9:30 p.m.

NEVADA

LAS VEGAS
KLVX, Sat. 9 a.m. and 12:30 p.m., Sun. 9 p.m.
● KTNV Sun. 8:30 a.m.

RENO
KNPB, Sat. 10:30 a.m., Sun. 1 p.m.
● KRNE, Sat. 10 a.m.

NEW HAMPSHIRE

DURHAM
WENH, Thu. 8:30 p.m., Sun. 10 a.m.

RIENE
WEKW Thu. 8:30 p.m., Sun. 10 a.m.

LITTLETON
WLEB Thu. 8:30 p.m. Sun. 10 a.m.

MANCHESTER
● WMUR, Sat 6 a.m.

NEW JERSEY

CAMDEN
WNJS, Thu. 8 p.m. Sat 9 p.m., Sun 1:30 p.m.

MONTCLAIR
WNJN, Thu. 8 p.m. Sat. 9 p.m., Sun. 9:30 p.m.

NEW BRUNSWICK
WNJT, Thu. 8 p.m., Sat. 8 p.m., Sun. 9:30 p.m.

TRENTON
WNJT Thu. 8 p.m., Sat. 9 p.m. Sun 1 p.m.

NEW MEXICO

ALBUQUERQUE
KNME, Sun. 9 p.m. and 10 a.m., Thu. 7 p.m.
● KOB, Sun. 6:30 a.m.

LAS CRUCES
KRWG, Sat. 11:30 a.m.

PORTALES
KENW, Wed. 10:30 p.m.
Sat 9 p.m.

NEW YORK

ALBANY
● WMHA, Fri. 1:30 a.m., Sun. 1:30 a.m.

ALFRED
WXHI Sat 9 a.m., Sun. 9 p.m.

AUBURN
● WHNG, Sat 6:30 a.m.

BUFFALO
WNED, Sat. 9:30 p.m.
WNEQ Sun. 8 p.m.
● WIVB, Sat. 6 a.m.

ELMIRA
● WYDC

LONG ISLAND
WLIW Sat. 10:30 p.m. Sun. 9 p.m.

NEW YORK CITY
WNET Sat. 9:30 p.m.
● WCBS, Sun. 7:30 a.m.

POTSDAM
WPTI, Sat. 10:30 a.m.

PLATTSBURGH
WCFE, Sun 11:30 a.m.

ROCHESTER
WXXI Fri. 10:30 a.m., Sun. 5:30 p.m.
● WHEC, Sun. 9 a.m.

SCHENECTADY
WMHT Sat. 10:30 a.m.
WAMQ, Sun. 8:30 a.m.

SYRACUSE
WCNY Sat. 10:30 a.m.
● WSTM, Sun. 9 a.m.

WATERTOWN
WNPE Sat 10:30 a.m.

WHITE PLAINS (NYC)
● WTBY

WILMINGTON
WNCF Sat 10:30 a.m., Sun. 9 a.m.

NORTH CAROLINA

ASHEVILLE
WUNF Sat. 9:30 p.m., Sun. 9 a.m.

CHAPEL HILL
WUNC, Sat. 1:30 p.m., Sun. 9 a.m.

CHARLOTTE
● WAXN, Sun. 12:30 p.m.
● WSOC, Sat 8:30 a.m.
WTVI, Thu. 9 p.m. Sat. 5 p.m., Sun. 11 a.m.
WUNG, Sat. 5:30 p.m., Sun. 8 a.m.

COLUMBIA
WUNG, Sat. 5:30 p.m., Thu. 8 p.m.

GREENSBORO
● WGHP Sat. 6:30 a.m.

GREENVILLE
WUNG Sat 5:30 p.m., Sun. 9 a.m.
● WLOS, Sat. 9 a.m.

JACKSONVILLE
WUNM Sat 5:30 p.m. Sun. 9 a.m.

LAURVILLE
WUNE, Sat 5:30 p.m. Sun. 9 a.m.

LUMBERTON
WUNU Sat 5:30 p.m. Sun. 8 a.m.

RALEIGH
● WTVD, Sun. 9:30 a.m.

RAMSEE RAPIDS
WUNP Fri 9:30 p.m., Sun. 8 a.m.

WILMINGTON
WUNJ Sat 5:30 p.m., Sun. 8 a.m.

WINSTON-SALEM
WUNL, Sat. 5:30 p.m., Sun. 8 a.m.

NORTH DAKOTA

BISMARCK
KBME, Thu. 7 p.m., Sat. 4 p.m.

DICKINSON
KDSP Thu. 7 p.m. Sat 9 p.m.

FAIRDALE
PJPT, Thu. 7 p.m., Sat. 9 p.m.

FARGO
KFME, Thu. 7 p.m. Sat 9 p.m.
● WDAY Sun. 6:30 a.m.
● WDAZ, Sun. 6:30 a.m.

GRAND FORKS
KGFE, Thu. 7 p.m., Sat. 9 p.m.

MINOT
KSRE, Thu. 7 p.m., Sat. 9 p.m.

WILLISTON
KWSE, Thu. 7 p.m., Sat. 9 p.m.

OHIO

AKRON
WEAO Sat 10:30 a.m. and 9 p.m., Sun. 9 p.m.

ATHENS
WOUB, Sat 9 p.m.

BOWLING GREEN
● WBGU, Sat. 6:30 a.m.
WBGU Sat 1:30 p.m.
Mon. 5 p.m.

CAMBRIDGE
WOUC, Sat 9 p.m.

CINCINNATI
WCET Thu. 8 p.m.
Sat. 9 a.m. and 6 p.m.
● WCPO, Sun. 9:30 a.m.

CLEVELAND
WVIZ, Sat 1 p.m.
Sun 11:30 p.m.
● WEWS, Sun. 6 a.m.

COLUMBUS
WOSU, Thu. 7 p.m., Sat. 9:30 p.m.
● WBNS, Sun. 9:30 a.m.

DAYTON
WPTD, Thu. 8 a.m., Sat. 8:30 a.m.
● WHIO, Sat. 9:30 a.m.

EUGENE
WPTD, Mon 9:30 p.m. Sun. 12:30 p.m.

PORTSMOUTH
WPBO Thu. 8 p.m., Sat 4:30 p.m.

SALEM
WGTE, Thu. 8 p.m.
Sat. 1 p.m., Sun. 1 p.m.
● WTVC Sun. 7 a.m.

WHITE PLAINS (NYC)
● WTBY

WILMINGTON
WNCF Sat 10:30 a.m. and 5 p.m. Sun 9 p.m.
● WFAJ Sun. 10 a.m.

OKLAHOMA

CHEYENNE
KWET Sat. 9:30 a.m. and 1:30 p.m.

DURANT
KOET Sat 6:30 a.m. and 12:30 p.m.

OKLAHOMA CITY
PETA, Sat. 9:30 a.m. and 12:30 p.m.
KPSG, Sun. 9:30 a.m.

TULSA
KOPB, Sat. 9:30 a.m. and 12:30 p.m.
● KTUL, Sun. 12:30 p.m.

OREGON

BEND
KOAB, Thu. 8 p.m., Sat. 3 p.m.

CORVALLIS
KOAC, Thu. 8 p.m., Sat. 9 p.m.

EUGENE
KEPB, Thu. 9 p.m. Sat. 9 p.m.
● KMTR, Sun. 6 a.m.

GRANTS PASS
KSYS, Thu. 8 p.m., Sat. 10:30 a.m.

LA GRANDE
KTVR Thu. 8 p.m., Sat 4 p.m.

MEDFORD
KSYS Thu 8 p.m., Sat 10:30 a.m.
● KOBU/KCOT, Sun. 4 p.m.

PORTLAND
KOPB, Thu. 8 p.m., Sat 9 p.m.
● KATU Sa 5:30 a.m.
Sun 12:30 p.m.

PENNSYLVANIA

ALLENTOWN
WLVT, Fri. 9:30 p.m.
Sat. 11:30 p.m.

ERIE
WQLN, Sat 8:30 p.m.
● WJET Sat 6:30 a.m.
● WTXF Sun 6:30 a.m.

HARRISBURG
WITF Thu 8 p.m.
Sat. 9 a.m. and 9 p.m.
● WCIAU, Sun. 11:30 a.m.

JOHNSTOWN
● WATM Sun. 10:30 a.m.

PHILADELPHIA
WHYY Sat. 11 a.m. and 9 p.m.
Sun. 9 p.m.
● WTXF Sat 9 a.m.

PITTSBURGH
● KDKA, Fri. 9:30 a.m.
WQED, Sat. 9 p.m.
WQEX, Sat. 9 p.m.

PITTSTON
WVIA, Thu. 8 p.m.,
Sat. 1 p.m. and 1:30 p.m.

UNIVERSITY PARK
WPSX, Sat. 9 a.m. and 1:30 p.m., Sun. 4:30 p.m.

WILKES-BARRE
● WILF Sat. 11 a.m.

RHODE ISLAND

PROVIDENCE
WSBE, Sat 8:30 p.m.
Sun. 6 p.m.
● WJNE, Thu. 1:30 a.m.

SOUTH CAROLINA

ALLENDALE
WEBA, Sat. 8 p.m.

BEAUFORT
WJWJ Sat 4 p.m.

CHARLESTON
● WCSC, Sat. 2:30 a.m.
WITV Sat. 8 p.m.

COLUMBIA
● WLTX, Sat. 8:30 a.m.
WRLK, Sun 8 p.m.

FLORENCE/MYRTLE BEACH
WJPM, Sat 9 p.m.
● WPDE, Sun. 7 a.m.

GREENVILLE
WNTV Sat. 4 p.m.

GREENWOOD
WNEH, Sat. 8 p.m.

HILTON HILL
WNSC, Sat. 8 p.m.

SPARTANBURG
WEET Sat. 4 p.m.

SUMTER
WJWJ, Sat. 8 p.m.

SOUTH DAKOTA

ABERDEEN
KDSD Sat. 4 p.m.

BROOKINGS
KESD, Sat. 8 p.m.

CHICO BUTTE
KDSD, Sat. 4 p.m.

LOWRY
KQSD, Sat. 8 p.m.

MITCHELL
KCSD Sat. 4 p.m.

RAPID CITY
KBHE, Sat. 8 p.m.
● KCLO, Sat. 4 p.m.

SIOUX FALLS
KCSD Sat 8 p.m.
● PBS, Sat. 8 p.m.

VERMILLION
KUSD, Sat 8 p.m.

TENNESSEE

CHATTANOOGA
● WDSN Sat 11 a.m.
WTCI, Sat. 1:30 p.m.

COOKEVILLE
WCTE, Sat. 1:30 p.m.

KNOXVILLE
WKOP, Sat. 1:30 p.m.
WVPX, Sat 1:30 p.m.

LEXINGTON-MARTIN
WLJT, Thu. 9:30 p.m.
Sat. 12:30 p.m.

MEMPHIS
WKNO, Thu. 9 p.m., Sat. 9:30 a.m.
● WTVF, Sat. 1 a.m.

NASHVILLE
WNCN, Sat. 6:30 p.m.
● WKRN Sat. 5:30 a.m.
● WSMV, Sun. 10 a.m.

TRI-CITIES
● WCPTV/WJHL, Sat. 11:30 a.m.

TEXAS

AMARILLO
KACV, Sat. 12:30 p.m.
● KCPN Sat. 11 a.m.

AUSTIN
KLRU Sat. 5 p.m.
● KTBC, Sat. 7:30 a.m.
● PVC, Sun. 5 a.m.

BEAUMONT
● KBMT Sat. 5:30 a.m.

COLLEGE STATION
KAMU Sat. 12:30 p.m., Mon. 10 p.m., Wed. 2 p.m.

CORPUS CHRISTI
KEDT Sat. 12:30 p.m. and 10 p.m.
● KRIS, Sat 11:30 a.m.

DALLAS/FORT WORTH
KERA Sat 9 a.m. 6:30 p.m.
● PBS, Sun. 10:30 a.m.

EL PASO
KCOS Sat 9 p.m.

HARLINGEN
PA 304, Sat 12:30 p.m.
● KVEO, Sun. 6 a.m.

HOUSTON
KUHT, Sun. 11:30 a.m.
● KTRK, Sun. 11 a.m.

LUBBOCK
KNCT, Sat. 12:30 p.m., Sun. 9:30 a.m.
● KLBK, Sun. 5 p.m.

ODESSA
KMCV, Sun. 12:30 p.m.

SAN ANTONIO
KLRN, Sat. 1:30 p.m.

TYLER
● KLPN, Sat. 10 a.m.

WACO
KCOT, Mon. 12:30 p.m. Sat. 6:30 p.m.
● KXXV, Sun. noon and 12:30 p.m.

UTAH

OGDEN
● BYU, Sat. 9:30 a.m., Wed. 11 p.m.

SALT LAKE CITY
PUBT, Sat. 9 a.m. and 5 p.m.
● KTVX, Sun. 11 a.m.

VERMONT

BURLINGTON
WETK, Thu. 7 p.m., Sat. 11 a.m.
● WCAX, Sun. 8:30 a.m.

RUTLAND
WVER, Thu. 8 p.m., Sat. 11 a.m.

ST. JOHNSBURY
WVTB, Thu. 8 p.m. Sat 11 a.m.

BRADENE
WVTA, Thu. 8 p.m., Sat 11 a.m.

VIRGINIA

CHARLOTTESVILLE
WHTJ Sat 9:30 a.m.

FALLS CHURCH
WNVT Sat 2:30 p.m.

FREDERICKSBURG
WVPJ Sat 1:30 p.m.
WVPY, Sat 1:30 p.m.

HARRISON
WMSV, Fri. 11 p.m., Sat. 1:30 p.m.

NORFOLK
WHRO Sat 8:00 a.m. and 2 p.m.
● WVEC, Sat. 7:30 a.m.

ROANOKE
WSBN, Fri. 11 p.m., Sat 1:30 p.m.

RICHMOND
WCVE, Sat. 6:30 a.m.
WCVW Fri. 8:30 p.m.
● WTVR, Sat. 9 a.m.

ROANOKE
WDBA, Fri 11 p.m.,
Sat 1:30 p.m.
● WPXR Sa 6:30 a.m.

WASHINGTON

CENTRALIA
KCKA Thu. 7 p.m.,
Sat 12:30 p.m. and 5:30 p.m.

PULLMAN
KWSU 3:30 p.m. P.M.
Wed. 7:30 a.m., Sat 1 p.m.

RICHLAND
KTNW Thu. 8 p.m.,
Sat 11 p.m., Sun. 9:30 p.m.

SEATTLE
KCTS, Sun. 5 p.m.
● KIRO, Sun. noon

SPOKANE
KSPS, Sat. 8:30 a.m.,
Sun. 8:30 p.m.
● KSPS/Sun. 9:30 a.m.

TOLEDO
KSTC, Thu. 8 p.m.,
Sat 12:30 p.m. and 8:30 p.m.

YAKIMA
KYVE Sun. 5 p.m.

WEST VIRGINIA

BEVERLY
WSWP, Sat. 1:30 p.m.

BLUEFIELD
● "BCAY"

CHARLESTON
● WCHS, Sun. 6 a.m.

HUNTINGTON
WPBY, Sat. 1:30 p.m.

MORGANTOWN
WNPB, Sat. 1:30 p.m.

WHEELING
● WTRF

WISCONSIN

GREEN BAY
WPNE, Wed. 7:30 p.m., Sun. 8 p.m.
WFAW-Sun 1:30 a.m.

LA CROSSE
WHLA Wed 7:30 p.m.,
Sun. 8 p.m.
● WLAJ, Sun. 8 a.m.

MADISON
WHA, Wed. 7:30 p.m., Sun. 8 p.m.
● WMSN, Sun. 6:30 a.m.
● WKOW Sun. 9 a.m.

MINNEAPOLIS
WHWC, Thu. 9:30 p.m.,
Sun. 8 p.m.

MILWAUKEE
WMVS, Thu. 7:30 p.m.,
Sat. 8:30 a.m.
● WTMJ Sun. 9 a.m.

PARK FALLS
WLEF Wed. 9:30 p.m., Sun. 9 p.m.

RHINELAND
WHWA Wed. 7:30 p.m.,
Sun. 8 p.m.
● WJFW Sun. 10:30 a.m.

WYOMING

RIVERTON
KCWC, Sat. 5 p.m.

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LETTERS
pp. 14-15

Kudos: The A20-F is a fractional height gauge for setting extremely accurate (to within plus or minus 0.002 inches) blade and bit heights on power tools. Gauges are also available in decimal and metric scales. AngleWright makes two other measuring tools: an adjustable triangle and a precision miter guide. The adjustable triangle, for setting angles on a radial arm saw or table saw, is accurate to 0.003 inches. The precision miter guide can be set to 90 degrees or 45 degrees with one fifteenth of a degree accuracy. The height gauges are $132 each. The triangle is $109. The miter guide is $84. Available from the AngleWright Tool Co., Box 25632, Los Angeles, CA 90025, 310-471-7432.

Concrete: *The Homeowner's Guide to Building with Concrete, Brick & Stone*, $14.95, Rodale Press, 1985.

ASK NORM
p. 29

Microcrystalline wax: Renaissance Wax, Cutlery Specialties, 22 Morris Ln., Great Neck, NY 11024, 516-829-5899; Conservator's Wax, $7.50 for 125 ml, Lee Valley & Veritas, Box 1780, Ogdensburg, NY 13669-6780, 800-871-8158; www.leevalley.com.

Metal Roofing Alliance. 888-638-2576.

Canvas wall covering: Rory Brennan, Preservation Plastering, 33 E. Putney Brook Rd., Putney, VT 05346, 802-387-4623.

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OUTTAKES
pp. 17-26

This One's on the House: AmeriCares HomeFront, 161 Cherry Street, New Canaan, Conn., 06840, 800-887-4673, www.americares.org.

Aloha, again. Kalaupapa National Historical Park, Box 2222, Kalaupapa, HI 96742, 808-567-6802.

Calendar: April 10—Lansing Housing Fair, Lansing, Michigan; 517-485-9100. April 16—National Kitchen and Bath Association Industry Show, Orlando, Florida, 313-792-6619.

WGBH Educational Foundation does not endorse any product or service mentioned or advertised in this magazine.

TRANSFORMATIONS
pp. 33-36

Architect: Bechtel Frank Ericksoo Architects, 1340 Massachusetts Avenue, Lexington, MA, 02141, 781-862-3313.

Contractor: Silva Brothers, 781-863-1962.

Tiler: Ferrante Tile, 9 Charlemont Road, Medford, MA, 02155, 781-396-6327.

Bath Accessories: The Company Store Catalogue; 800-289-8508.

Wallpaper Hanger: Normand St. Marie, 322 Nashua Road, Dracut, MA 01826, 978-957-0555.

Wallpaper: South Hampton Floral from the Ralph Lauren Home Collection, available at the Waltham Wallpaper and Paint Corp., 591-593 Main Street, Waltham, MA, 781-893-3732.

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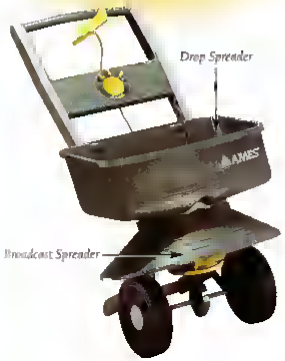

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BY OESIGN
p. 40-42

Robert A M Stern Architects, New York, NY, 212-967-5100
Bill Kaufman, Wesketch Architecture, Liberty Corner, NJ, 908 647-8200. Rick Bechtel, Bechtel Frank Erickson Architects Inc , Lexington, MA, 781 862-3313

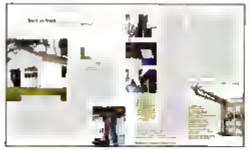
MATERIALS
pp. 47-49

Finishes expert: John Dee at John W Dee Painting & Decorating, Box 1415, Concord, MA 01742
Polyurethanes (and walnut stain): Minwax Co Inc., Saddle River, NJ, 201-818 7500
Paste filler: The Bartley Collection, Easton, MD, 800 227-8539.
Shellac flakes: H Behlen & Brothers, Amsterdam, NY. Available through: Woodcraft, 800-535 4482; Klingspor, 800-228-0000, Garrett Wade; 800-221-2942; Merit Industries, 800-856 4441, Rockler; 800-279-4441
Liquid shellac: Wm Zinsser Co , Somerset, NJ, 732-469 8100
For more information: *The Woodfinishing Book* by Michael Dresdner, The Taunton Press, Newtown, CT; 800-283-7252

LUXURIES
pp. 51-54

Mosaics Designer: Michael R. Golden Design, 37 West 20th Street, New York, NY 10011, 212 645 3001.
Installer: Kostas Partsinevelos, Craft Marble Works, 481 Valley Road, Clark, NJ 07066 1905, 732-381-4009
Mosaics: New Ravenna Mosaics Inc , Box 1000, Exmore, VA 23350, for local showrooms call 757-442 3379. Water works, 469 Broome Street, New York, NY 10013, 212 966 0605.

MAINTENANCE
pp. 56-57



Jaeger Overhead Door, 2322 Morris Ave , Union, NJ 07083, 908-686-0073

FINANCES
pp. 59-60

American Land Title Association, 1828 L Street NW, Suite 705, Washington, DC, 20036, 202-296-3671, 800-787-2582, Web address, www.alta.org

TECHNOLOGY
pp.63-65

Electrician: Allen Gallant, Gallant Electric, 781-893-4636
Design: Doreen Le May Madden, LL, CLC, the Lighting Design Group,, 617 254 0700
Grand Central Terminal renovation project: Richard Renfro, architectural lighting designer, Renfro Design Group, 18 W 21st St , New York, NY 10010, 212 229-9990
Fiber optic lighting: Lucifer Lighting Co., 414 Live Oak St , San Antonio, TX, 78202, 800 879-9797.

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EXTRAS
pp. 67-68

Landscaping contractor: K & R Tree and Landscape, 6 Park Drive, Burlington, MA 01803; 781 272-6104
Hydroseeding: All Star Landscape Design & Construction, 8 Corey Lane, Arlington,

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MA 02174, 781-643-5755.
Seed: Lofts Seed, Inc., Box 26223, Winston-Salem, NC 27114, 800-526-3890.
Further reading: *The Chemical-Free Lawn* by Warren Schultz, 1996, $14.95, Rodale Press, 33 E. Minor St., Emmaus, PA 18098, 800-914-9363. *A Man's Turf: The Perfect Lawn* by Warren Schultz, May, 1999, $35, Clarkson Potter/Publishers, 201 E. 50th St., New York, NY 10022, 800-726-0600.

KEY WEST
pp. 73-79

Gingerbread: Hansen & Bringle Cabinets and Millwork, 5750 Second Avenue, Key West, FL 33040, 305-294-4279.
Architect: Michael Miller Architecture & Design, 517 Duval Street, Suite 200, Key West, FL 33040, 310-294-7687.
Preservationist: George Born, Historic Florida Keys Foundation, 510 Greene Street, Key West, FL 33040. For more information on Key West contact 800-FLA-KEYS or visit www.fla-keys.com, the official Web site for Key West and the Florida Keys. You may also enjoy Joy Williams' *The Florida Keys*, $14 in paperback, Random House, 1987.

DREAM HOUSE
pp. 80-85

Builder: Country Club Homes Inc., New Canaan, CT, 203-966-5550.
Architect: Robert A.M. Stern Architects, New York, NY, 212-967-5100. **Cedar Restoration:** Inc., 1508 Humphrey Ave., Birmingham, MI 48009, 248-540-2870.
Red cedar shingles: 18-in. #1 Perfection, G&R Cedar Ltd., Box 83, Matsqui, BC V4X 3R2, 604-826-8000.
For further information: Cedar Shake & Shingle Bureau, Box 1178, Sumas, WA 98295, 604-462-8961; www.cedarbureau.org.
Mesh drainage membrane: Cedar Breather, Benjamin Obdyke Inc., 65 Steamboat Dr., Warminster, PA 18974, 800-346-7655.

LANDSCAPE
pp. 86-90

Butterflies. Jeffrey Glassberg, North American Butterfly Association, 4 Delaware Road, Morristown, NJ, 973-285-0907; www.naba.org.
Meadows: Larry Weaner, 804 Bethlehem Pike, Erdenheim, PA 19038, 215-836-1051.
Ousbon Bateman, Emerald Thumb, 7 Fox Hollow Road, Rhinebeck, NY 12572, 914-876-3611.
Field and brush mower: DR 46 14-horse power all-terrain field and brush mower, Country Home Products, Meigs Road, Vergennes, VT, 802-877-1200. Price varies according to seasonal discounts.
Forestry and landscaping equipment: Bill Beam, Eastern Saws, 373 Hicksville Rd., Stanfordville, NY, 914-868-1325.
Meadow grass and wildflower seeds: Available through Bowman's Hill Wildflower Preserve (for Eastern species), Box 685, New Hope, PA 18938, 215-862-2924. Prairie Nursery (for Midwestern and Western species), Box 306, Westfield, Wisconsin 53964; 800-476-9453, www.prairienursery.com.

POSTER
pp. 105-106

1. Modeling, 80 teeth, 3⅛ inch diameter, $14.95, MicroMark, 800-225-1066.
2. Trim, 36 teeth, ATB grind, 4⅜-inch diameter, $38, Freud, 800-472-7307.
3. Diamond masonry, diamond grit, dry, 5-inch, $46, Tenryu America, 800-951-7297. 4. Cordless, carbide teeth, 5⅜-inch, DeWalt, 800-762-6672. 5. Abrasive metal, aluminum oxide grit, 7 inch, $4, Black & Decker; 800-762-6672.
6. Remodeling, 18 carbide teeth, ATB grind, 7¼-inch, DeWalt. 7. Wet, diamond grit, 7 inch, $81, MKD, 800-421-5830.
8. Decking, 16 carbide teeth, FT grind, 7¼ inch, $23, Freud. 9. Abrasive masonry, fiberglass reinforced, 7¼-inch, $3, Norton Company, 800-543-4335.
10. Nonferrous metal, 58 carbide teeth, TCG grind, 8-inch, $82, Freud.
11. Dado, 6 inner chippers and 2 outer, 24 tooth carbide blades, 8 inch, $179, Jesada Tools, 800-531-5559.
12. Brush cutter, 32 steel teeth, 9 inch, $40, Tenryu. 13. Melamine, 80 carbide teeth, ATB grind, 10 inch, $138.75, Amana Tool Corp., 800-445-0077.
14. Plywood, steel teeth, 10 inch, DeWalt. 15. Ripping, 24 carbide teeth, FT grind, 10 inch, $58.65, Jesada.
16. Crosscut, 80 carbide teeth, ATB grind, 10-inch, $115, Freud.
17. Combination: 1035 Budke, 50 carbide teeth, ATB & R grind, 10-inch, $45, Systimatic, 800-426-000.
18. Planer, 3381, hollow ground, 90 steel teeth, 12 inch, DeWalt.

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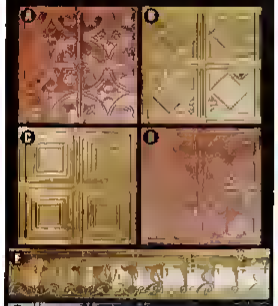

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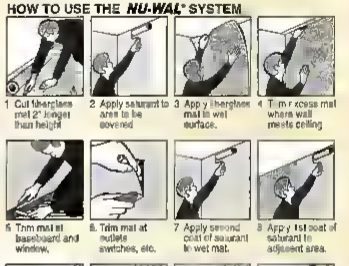
1 Cut fiberglass mat 2" longer than height
2 Apply saturant to area to be covered
3 Apply fiberglass mat to wet surface.
4 Trim excess mat where wall meets ceiling
5 Trim mat at baseboard and window.
6 Trim mat at outlets switches, etc.
7 Apply second coat of saturant to wet mat.
8 Apply 1st coat of saturant to adjacent area.
9 Apply mat to 2nd area overlapping by 1"
10 Cut down center at overlap (both layers)
11 Remove mat strips on both sides of cut.
12 Apply 2nd coat of saturant (include seam)

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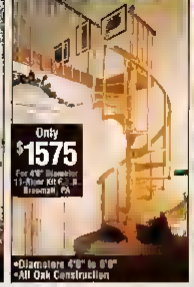

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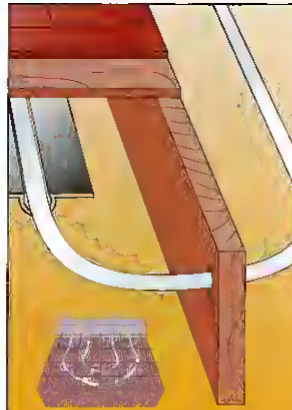

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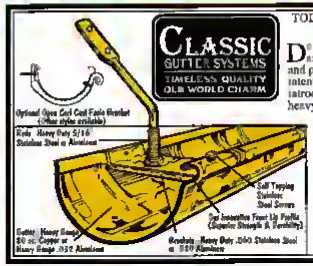

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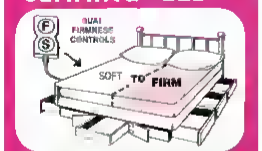

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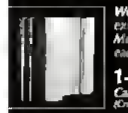

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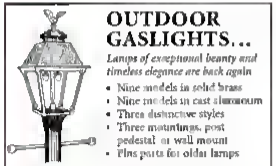

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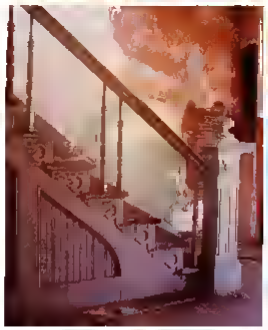
In the historic College Hill neighborhood of Lynchburg, Virginia, once gracious houses are being saved from the wrecking ball, thanks to an innovative new homesteading program. Since 1997, the Lynchburg Redevelopment and Housing Authority has acquired 13 run-down residences and is offering them to enthusiastic renovators for the grand sum of $1.

One Victorian awaiting a buyer is an 1,894-square-foot two-story wood-framed house built in 1850. It has seven rooms including a dramatic entryway with a winding staircase and a front parlor with a fireplace and pocket doors. The brick foundation is sound, and the tin roof is tight, but the house needs new heating, plumbing and wiring as well as windows.

To purchase the house at this bargain price, prospective homesteaders must prove they can afford to renovate, get city approval for exterior work, complete all renovations within three years and live there for at least five years. Delores E. Fowler, the first buyer approved under the program, spent roughly $70,000 refurbishing her 150 year-old house. She says that the screening process is well worth the effort. "It has been a rewarding and interesting experience—even if I was the guinea pig."

CONTACT

Edward H. McCann
Lynchburg Redevelopment and Housing Authority
Box 1296
Lynchburg, VA 24505
804-845-6011



Although the three-bedroom house at 1101 Polk Street, top, has suffered years of neglect—the last occupants left in the early 1990s—much of the original fabric remains intact, spared from the blight of thoughtless renovation. The door to the left leads to the main parlor, the door on the right opens onto the front entryway and staircase, bottom left, with its ornate newel post and fancy scrolled brackets. Replacement balusters could be copied from several originals still in place. Scrollwork and classic moldings also grace the posts of the front porch, bottom right

If you know of a house that should be saved, please write to Save This Old House, 1185 Avenue of the Americas, 27th floor, New York, NY 10036

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